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AND ON SOME FORMS OF

LOCAL DISEASE

AFFECTING PRINCIPALLY THE ORGANS OF GENERATION

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By HENRY LEE

PROFESSOR OF SURGERY AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND,
SURGEON TO ST. GEORGE'S HOSPITAL, HON. FELL. KING'S COLL., ETC.

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PREFACE.

THE principal object of the present work is to illustrate some of Hunter's doctrines, which the lapse of time, and the dissemination of more recent views, have obscured or caused to be forgotten. Some of these doctrines require to be modified by the light of more recent investigations; while others, which have been long neglected, will still serve as landmarks for this and for succeeding generations. Some of Pearson's views with regard to the treatment of Syphilis, which, in the author's opinion, deserve more attention than they have lately received, are also considered.

The chief subjects treated of in the following Lectures, which are not dwelt upon in the systematic works of other English authors of the present day, are —the inoculability of syphilitic blood in its various forms—the conditions under which the secretions of primary and secondary syphilitic manifestations may be inoculated naturally or artificially—the morbid processes produced by such inoculations—the modifications of those processes in patients previously syphilitic—primary and secondary syphilitic diseases of the mucous membranes, and their liability to communicate constitutional syphilis—the essential difference of the morbid processes in which the constitutional and local forms of syphilis respectively have their origin—and the pathology and treatment of discharges from the prostate gland, Cowper's glands, and the vesiculæ seminales.

Some of the following Lectures have been published, and others have appeared in abstract, in different medical periodicals. They are now collected together for the first time in one volume.

9 Savile Row, *Sept.* 1875.

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LECTURE I.

THOSE who have before me occupied this chair have so fully and so ably illustrated the different parts of the Hunterian Museum that I might well shrink from the task of attempting to add anything to their labours.

The object of these Lectures, however, as it occurred to me, was to illustrate, as far as may be, the whole of Hunter's labours, and in this view there appeared still some subjects which had engaged his attention, and upon which, in a practical point of view, we might with advantage even now occupy our time.

The natural and diseased structures, illustrated by the specimens in our Museum, have been demonstrated in this theatre with an energy and talent that may not be surpassed; but with regard to the naturally fluid parts of the body and their diseases, and especially with regard to its diseased secretions, much still remains to be said. A wide field is here open to us—one which may, perhaps, be less attractive to the strictly logical mind than that in which every step may be demonstrated by preparations, which may be referred to year after year, but still one in which the knowledge gained is wonderfully productive in its practical applications. To the fluid parts of the body Hunter appears to have directed his especial attention, and this is particularly true with regard to the healthy and diseased secretions connected with the organs of generation. These fluids are not capable, like the more solid parts of the body, of being preserved, except in microscopic quantities, for continued illustration, yet are they instinct with the germs of life, and attracted the especial attention of him whose labours these Lectures are intended to illustrate.

The real use of any fact in physiology, or of any anatomical or physiological preparation, is to illustrate some living action, and it was to this end that Hunter laboured, both in his dissections and writings; and, regarded in this light, every dissection and every fact has a reference to the whole life of the individual, and illustrates something with regard to that life. If we do not see this connection, we are dealing with dead matter alone, and our studies are barren as regards living beings. This idea was present to the mind of Goethe, when he puts into the mouth of Mephistopheles—

> "Who would describe and study aught alive,
> Seeks first the living spirit thence to drive.
> Then are the lifeless fragments in his hand;
> There only fails, alas! the spirit-band.
> This process chemists name, in learned thesis,
> Mocking themselves, *Naturæ encheiresis.*"

Pope had the same idea when he wrote—

> "His principle of action once explore,
> That instant 'tis his principle no more;
> Like following life through creatures we dissect,
> We lose it in the moment we detect."

Two different schools have claimed Hunter as their disciple. It has been said by some that his strength lay in his powers of induction, by which he inferred respecting a whole class what he had ascertained respecting some individuals of that class; whilst, by others, it has been assumed that he had a wonderful faculty of deduction, by which, by an intuitive appreciation of certain principles with regard to healthy and diseased actions, he could apply those principles to other actions and diseases which he had not himself investigated. Thus Babington remarks, with regard to his investigation of the diseases which will hereafter chiefly occupy our attention, that Hunter's power of reasoning was scarcely on a level with his other faculties, but that the errors of his logic were perpetually corrected by the variety and accuracy of his experiments; that he sought to arrive at the general laws of nature at once by conjecture rather than by a close and detailed study of her inferior operations, to ascend step by step through a slow and gradual induction to those laws which govern her general procedure. Others, again, have claimed for Hunter that to him the characters of nature were legible, but that he, in the words of a great man, perceived they were not plain enough for those who run to read; that he was cautious, sometimes we might almost say timid, in his method of proceeding. *He* did not attempt to fly where he must first creep. In considering a complex subject, he examined every distinct ingredient, one by one; he reduced everything to the utmost simplicity. He examined principles by their effects, and afterwards the effects by their principles. He compared his subject with things of a similar nature, and even with things of a contrary nature; for he found that discoveries may be, and often are, made by contrast, which would have escaped him by a single view. The greater number of comparisons he made, the more general and certain knowledge he obtained of the matter in hand, as being built upon a more extensive and perfect induction. If this method did not always preserve him from error, at least it preserved him from the spirit of error, and made him cautious of pronouncing with positiveness or with haste, when so much *labour* might end in so much *uncertainty.*

On the other hand, Mr. Green, in his *Vital Dynamics*, has not hesitated to attribute Hunter's power of interpretation and insight to a *lux intellectus*, a *lumen siccum*, the pure and impersonal reason. "The discovery of any law of nature," he says, "has uniformly the character of felicity, and of a revelation, as by a flash of divine light, of the legislative wisdom of the Creator.

"By contemplating life as a law he laid the foundation of scientific physiology; and in that conception of a law he taught us that life is a power anterior in the order of thought to organisation, and that it continues to manifest itself in all the forms and functions of animated beings.

"This great idea never ceased to work in him as his genius and governing spirit; and if, in his printed works, the one directing thought seems occasionally to elude his grasp, yet, in the astonishing preparations in his Museum, we find him constructing it for scientific apprehension out of the unspoken alphabet of nature."

How far these different criticisms are just, we shall have some opportunity of judging. It is probable that

Hunter was not conscious of belonging to any school, but that he felt a power working within him which it would have been exceedingly difficult for him to define.

With regard to our present subject, the object and aim of Hunter's life and the character of his mind is well summed up by Coleridge. He says:—"When we stand before the bust of John Hunter, or as we enter the magnificent Museum furnished by his labours, and pass slowly with meditative observation through this august temple which the genius of one great man has raised and dedicated to the wisdom and uniform working of the Creator, we perceive at every step the guidance, we had almost said the inspiration, of those profound ideas concerning life which dawn upon us indeed through his written works, but which he has here presented to us in a more perfect language than that of words—the language of God himself as uttered by nature. That the true idea of life existed in the mind of Hunter there cannot be the least doubt, but it may perhaps be doubted whether his incessant occupation and his stupendous industry in the service both of his contemporaries and of posterity, added to his comparatively slight acquaintance with the arts and aids of logical arrangement, permitted in many instances his *fully* unfolding and arranging it in distinct, clear, and communicable conceptions. Thus the light which occasionally flashes upon us seems at other times, and frequently, to struggle through an unfriendly medium, and even sometimes to suffer a temporary occultation.

"In order to dissipate the undeniable obscurities, and to reconcile the apparent contradictions found in his works, to distinguish in short the numerous passages in which, without perhaps losing sight internally of his own peculiar belief, he yet falls into the phraseology and mechanical solutions of his age, we must distinguish such passages from those in which the form corresponds to the substance, and in which therefore the nature and essential laws of vital action are expressed as far as his researches had unveiled them to his own mind without disguise.

"To effect this we must, as it were, climb up on his shoulders and look at the same object in a distinctive form, because seen from the more commanding view furnished by himself."

That this description gives us a correct idea of Hunter's mind, and that in every dissection he made, and in every preparation he has left, he believed that he was investigating and illustrating the results of some living process, is, I think, shown by the fact that he summed up the labours of his life by his work on the blood. Hunter insists much on the living principle of the blood, and thinks that there is an analogy between the actions which we can trace in the blood itself and in other parts of an organised being. Without some such principle to guide us, he observes, we are dissecting a dead body, without having any reference to the living, or even knowing it ever had been alive. That the blood has life, he says, is an opinion that I have started for above thirty years, and have taught it for near twenty years of that time in my lectures. It does not therefore come out at the present time as a new doctrine. Although Hunter appears to have arrived at the idea that the blood is alive, from his own independent observation, and says that he had started the opinion, yet in truth it is as old as any writings which we possess. In the oldest Hebrew records the idea is vividly set forth, and many of the Hebrew ceremonies and rites would be unintelligible and unmeaning without the conception, stated in so many words, that "the blood is the life."

But, in truth, even in comparatively modern days, there were some who, before Hunter, attributed life to the blood. Some passages, in which Milton and Shakespeare attributed life to the blood, I have, with the aid of a friend, collected.*

---

* "Wishing it so much *blood* unto your *life*."—*Pericles*, ii. 3.
"Even as my *life* my *blood* that fosters it."—*Pericles*, ii. 5.
"Their *blood thinks* scorn till it fly out."—*Cymbeline*, iv. 4.
"Consume not your *blood* with sorrowing."—*Pericles*, iv. 1.
"*Speech*, to stir men's *blood*."—*Julius Cæsar*, iii. 2.
"Higher than both in *blood* and *life*."—*Ant. and Cleop.*, i. 2.
"Lack *blood* to *think* on't."—*Ant. and Cleop.*, i. 4.
"Our bloods no more *obey* the Heavens."—*Cymbeline*, i. 1.
"Thou art poison to my blood."—*Cymbeline*, i. 2.
"Resolute acting of your blood."—*Macbeth.*
"This speech like iron through your blood."—*Much Ado*, v. 1.
"Only my *blood speaks* to you."—*Merchant of Venice*, iii. 2.
"Much sadness hath congealed your blood."—*Taming of the Shrew.*
"Thoughts that would thick my blood."—*Winter's Tale*, i. 2.
"Doth not thy blood thrill at it."—1 *Henry IV.*, ii. 4.
"The blood and courage."—*Henry VIII.*, i. 2.
"Heavy sorrows of the blood."—2 *Henry IV.*, iv. 4.
"Infect my blood with joy."—2 *Henry IV.*, iv. 4.
"My blood begins to flatter me."—*Henry V.*, v. 2.
"Or is your blood so madly hot."—*Troilus and Cressida*, ii. 2.
"Let thy blood be thy direction."—*Troilus and Cressida*, ii. 3.
"Roused his drowsy blood."—*Troilus and Cressida*, v. 5.
"Might fire the blood of ordinary men."—*Troilus and Cressida*, iii. 1.

This subject is one which may not be deemed out of place in the consideration of a disease in which it may be said with the utmost truth, that "the life of all the blood is touched." To the study of this disease Hunter applied the full energies of his mind, and the principles which he so long taught, had reference to the life of the fluid as well as the more solid parts of the body. It will now be my object to trace some of his opinions, and see whether they have stood the test of time, and see how far he was correct in his conclusions.

Morbid poisons, he observes, are many, and have different powers of contamination. Those which affect the body either locally or constitutionally, but not in both ways, he called *simple*. Those which are capable of affecting the body both locally and constitutionally he called *compound;* and hence we are bound to ask ourselves whether Hunter generalised too freely, or whether this principle which he laid down in his opening chapter on the venereal poison has not been

---

"When grief and blood ill-tempered."—*Julius Cæsar*, iv. 3.
"That makes my blood cold."—*Julius Cæsar*, iv. 3.
"My breath and blood."—*Lear*, ii. 4.
"Affection, and value youthful blood."—*Rom. and Jul.*, iii. 5.
"O treason of the blood."—*Othello*, i. 1.
"Issuing *life-blood.*"—*Merchant of Venice*, iii. 2.
"Infect the very life-blood."—1 *Henry IV.*, iv. 1.
"Draw life-blood from my heart."—1 *Henry IV.*, iv. 6.
"How couldst thou drain the life-blood."—3 *Henry VI.*, i. 4.
"My sword is the life-blood of thee."—*Henry VIII.*, iii. 2.
"To the quick, thy life-blood out."—*Titus Andron.*, iv. 4.
"Deadly pele,
Groaned out his soul with gushing blood infused."
Paradise Lost, Book x. l. 447.

fully confirmed by subsequent investigations. I am not aware, however, that any writer has commented on Hunter's words as applied to this disease, or has given him credit for this clear distinction, which, I believe I may say, is now well nigh universally acknowledged.

A poison may affect only the part in contact with it, and may act either mechanically or chemically, or may affect the vital action of that part. Thus powdered glass acts mechanically, corrosive sublimate acts chemically, and the matter of cancer acts only on the living principle of the part. Another mode in which a poison acts is upon the constitution of the individual. This constitutes it a morbid poison, as examples may be cited, jail fevers, and different forms of secondary inflammation where there has been no open wound.

A third form in which a poison may act is on the nervous system; and, as examples, Hunter cites the occasional effects of poisoned arrows, honey, mussels, nux vomica, and probably the bite of a mad dog, which produces no specific visible effect on the injured part.

Those poisons which are liable to affect the body both locally and constitutionally, Hunter calls compound or *mixed*. This latter term, again, has been very extensively employed in modern times, although not exactly in the sense used by Hunter, but no one, as far as I know, has given Hunter the credit for having accurately laid down the different modes of action which it involves.

This mixed action is of two kinds—first, when it produces inflammation of the parts, and at the same time affects the whole constitution, as in the venereal disease; and, second, where a local disease, as the itch, is followed by some secondary complication, such as erysipelas; or like the jail fever, which acts first on the constitution, and may be followed by certain local diseases; or like the vaccine inoculation, which produces a local disease, followed by a general constitutional influence.

Some of these poisons do not affect the constitution until ulceration takes place, and a knowledge of this fact enables us sometimes very materially to modify or to prevent their general results. Each specific poison has its own latent period before it affects the constitution, but upon what this depends has not hitherto been determined.

Animal poisons, Hunter observes, act principally on living parts. Nothing shows the variety of animal matters more than the poisons. The blood may be considered as a fluid animal, because it contains all the parts which compose the animal, and the whole of the body is composed out of it; or, as a learned friend of mine has expressed it, the blood may be regarded as a living atmosphere intermediate between the external air and the internal organs. The solids which exist already must have the power of decomposing this fluid, according to the stimulus of each part, and on that the natural and morbid secretions depend.

Some animal poisons affect the skin by simple touch, as those belonging to certain sea insects, the ant, etc. The poisons produced by other animals cannot possibly operate unless conveyed into a wound which brings them in contact with the living principle. They will always act under such circumstances, but not when the cuticle is entire. This has over and over again been asserted with regard to the syphilitic poison, but Hunter, as we shall see, took a different and more correct view, as will be illustrated hereafter, especially by case No. VIII.

Animal poisons which require a wound before they produce their effects on other living animals are very active, producing immediate effects, and they act in proportion to the quantity of the poison used.

Those which poison by the touch first produce a soreness, and some swelling and inflammation, which is of the adhesive kind, although the swelling is generally œdematous. Those which act externally and locally do not occasion swelling at any distance. They all appear to have their particular distance, unless increased by rubbing. The poisons inserted into the skin, on the contrary, produce sometimes a very extensive local effect, quite independent of any constitutional affection. The sting of a wasp or a hornet, as I know practically, will produce in a couple of hours swelling redness, heat, and pain, over a surface larger than the palm of the hand. The natural poisons which produce constitutional effects also produce local actions, but these are not so fixed as those which produce local results only. Suppuration of the part to which the poison is applied rarely happens, but by absorption this may sometimes happen, as in common buboes.

Morbid poisons, according to Hunter, probably arise from a diseased state of the body or part, and may originate either spontaneously or from the application of similar matter from another animal. They have all a period of incubation. Some of these poisons are lost, and some are losing ground daily for want of frequent communication. Some of these act in a fluid state, and some in a state of vapour. The venereal poison requires contact, and affects generally those parts which are most frequently in contact. Some affect the secretions, so as to make them poisonous, as the saliva in the mad dog. *Some of these are local, and others both local and constitutional.* Some affect the whole system rapidly, but not so the venereal. Every part of the body is more or less susceptible of being affected by those poisons. There are three ways in which they may affect a living being—1st, When the effect is always local and never reaches the constitution; 2dly, When the constitution alone is affected; and, 3dly, When the disease has both local and constitutional manifestations.

It may not be uninteresting to observe here that Hunter regarded cancer as a local disease which never reached the constitution, but I do not remember that his opinion was referred to in a late celebrated debate upon the subject. These principles of Hunter's I shall have abundant opportunity of illustrating during the present lectures. 1st, With regard to the local syphilitic sore, which, as I believe, never affects the constitution; 2dly, Where the constitution alone is affected, as in hereditary syphilis; and, 3dly, Where a local disease precedes the constitutional manifestations. The effect of a poison is external and local when it affects only the cutis, as the itch. It may be also local and never reach the constitution when the patient contracts a poisonous disease, which is capable of running into diseased action, and communicating the same to others. As an example of this, Hunter gives the venereal disease; and if those who have written on this subject since his time had weighed his words, they must have come to the conclusion that he believed that there was a syphilitic poison which did, and one which did not, infect a patient's constitution. Here, again, I think we shall see that Hunter did not generalise too freely, and if those who followed him in his investigations had also remembered what he had said, much intricate confusion, much fierce controversy, and many a laboured volume both in French and in English might have been spared.

Hunter showed experimentally that every part of an animal had its own independent vitality, and that it would retain this vitality for a time after it was separated from the rest of the body. He removed the testis from one animal and placed it in the peritoneal cavity of another, and the testis lived independently, until it formed fresh connections and became part of the animal into which it had been transplanted. In like manner, as illustrated by a beautiful preparation in our Museum, he planted a tooth in the comb of a cock. The tooth maintained its independent vitality until adhesion occurred, and the vessels of the tooth communicated with those of the comb of the cock. In this preparation the vessels of one may be seen communicating with the vessels of the other. The healthy living actions commenced in one would be carried on in the other; or, to speak in accordance with the more modern physiological nomenclature, the bioplasts on one structure would continue their growth, their development, and their actions, in the other. The healthy actions of the two would thus be in perfect sympathy; and not only may healthy influences be thus transferred from one part to another, but diseased actions may likewise be so communicated. The following cases mentioned by Hunter are in point:—

CASE I.—A young lady had a tooth transplanted, and the tooth fastened extremely well. It continued firm for about a *month*, when the gum began to ulcerate, leaving the tooth and socket bare. The ulcer continued, and blotches appeared upon the skin, and ulcers also in the throat. The disease was treated as venereal, and the symptoms disappeared, but they recurred several times after very severe courses of mercury. She at last got well.

CASE II.—A gentleman had a tooth transplanted, and the tooth remained without giving the least disturbance for about a *month*. The edge of the gum then began to ulcerate, and the ulceration went on until the tooth dropped out. Some time afterwards, spots appeared almost everywhere on the skin. He was put under a course of mercury and all disease disappeared. After an interval, the same appearances returned, with the addition of swelling in the bones of the metacarpus. He was now put under another course of mercury, more severe than the former, and in the usual time all the symptoms again disappeared. Several months after, the same eruptions came out again, but not in so great a degree as before, and without any other attendant symptoms. He a third time took mercury, but it was only ten grains of corrosive sublimate in the whole, and he got quite well. The time between his first taking mercury and his being cured was a space of three years.

In the *Medical Transactions of the College of Physicians of London*, published in the year 1785, Dr. William Watson, at that time the vice-president of the Royal Society, gives an account of (CASE III.) a young unmarried lady, about twenty-one years of age, who had a tooth transplanted into the socket of one of the incisors of the upper jaw. The new tooth fastened exceedingly well. It remained firm for a month, when her mouth became very painful. The gum became ulcerated, and part of the alveolar process was left bare. Before another month the ulceration occupied the whole space under the upper lip, between the teeth and nose. It extended likewise to the cheeks and throat. Blotches then appeared on her face, neck, and various parts of the body; several of these became ulcerated painful sores. After trying a variety of tonic medicines without benefit, two grains of calomel were ordered once or twice a day. She took about fourteen pills, when she was obliged to discontinue the use of the calomel on account of the griping and purging which it produced. During the time that she was taking the pills the ulceration of her mouth and cheeks did not spread, but were less painful, and of a milder appearance. The blotches on her face and body grew paler, and such of them as had ulcerated healed apace, and no new ones appeared. The mercurial inunction was now tried, but in ten or twelve days the griping and purging returned, and the ointment was discontinued.

The good effects of the mercury were, however, Dr. Watson observes, very apparent. The blotches all disappeared; the ulcerations in her face and body completely healed, and those of the mouth nearly so. A portion of the alveolar process subsequently exfoliated, and ultimately the patient died.

Dr. Watson remarks that the progress of this disease not being impeded by the most powerful antiseptics, and its giving way to mercurials, even in small doses, cannot but suggest that the disease was truly venereal.

At the time that such cases as the above were recorded, had not the idea taken possession of some men's minds that absorption of syphilitic poison under the circumstances was impossible, the diseases described would doubtless have been assigned to their right cause.

In some of the cases care was taken to wipe the surface of the tooth before it was transplanted, and it was thought that, by so doing, every chance of inoculation would be prevented, but a brief reflection will show that such a precaution could not affect the living actions going on within the tooth. That syphilitic blood, or the germinal elements of the blood, may be conveyed from a diseased to a healthy person is demonstrated by the following observations:—

CASE IV.—Recorded by Waller.—A boy, fifteen years old, was inoculated with the blood of a syphilitic woman on the 27th of July 1850. The inoculations were performed by means of a scarificator, and the blood was inserted into the wounds with a small piece of wood, and with lint soaked in the blood. At the expiration of three days the scarifications were healed. On the 31st of August, thirty-four days after the inoculation, two tubercles appeared the size of peas, of a reddish pale colour, dry upon their surface, unaccompanied by pain or itching. These gradually increased, became united, and covered with scabs. They were surrounded by a faint red areola. The base of the tubercles became firm, and lost their elasticity; their surface became covered by a thin brown crust. On the 15th of September, these united tubercles had attained the size of the transverse section of a pigeon's egg, and were surrounded by a red copper-coloured areola. On the 1st of October, sixty-five days after the inoculation, and thirty-two days after the first appearance of the tubercles, an eruption of roseola appeared, and this was followed by stains over the patient's whole body, and by papules and tubercles, especially on the inside of the thighs and on the stomach.

CASE V.—Recorded by Lindwurm.—A patient, seventy-one years of age, affected with an incurable ulceration of the face, was inoculated with the blood of a woman, twenty-eight years of age, who was syphilitic, and eight months gone in the family-way. The inoculation was performed by means of the ordinary instrument used for subcutaneous injections. No irritation followed this inoculation until four weeks afterwards, when a little red tubercle appeared on the inoculated spot. This gradually increased, became excoriated, and covered by a thin brown crust. It became as large as a franc piece, surrounded by an inflamed areola, with a hardened base and raised edges. A week after this a neighbouring lymphatic gland became enlarged, and this was in its turn followed by well marked general syphilitic symptoms.

CASE VI. — Recorded by Gibert. — A patient, affected with lupus of the face, was inoculated with some blood taken from a large scaly patch, of a red copper-colour, on the forehead of a syphilitic patient. This patch afforded no secretion. The inoculation was performed on the 9th of February 1859, on the upper and anterior surface of the forearm. On the 1st of April, fifty days after the inoculation, there was a red scaly papule, quite dry, on the inoculated spot, resembling in its characters the scaly patch from which the blood had been taken. This inoculated spot had commenced about a fortnight previously, and around this were some copper-coloured slightly raised stains. A painful gland, as large as a nut, was felt in the corresponding axilla.

On the 23d of April there was a rash of roseola over the body, some scaly pimples on the anterior surface of the arms, and many scabs among the hair. Mucous tubercles also existed around the anus and at the umbilicus. There was no disease of the organs of generation.

CASE VII.—Professor Pelizzari, in 1860, inoculated two students of medicine with the blood of a patient affected with constitutional syphilis. The results of these experiments were negative. On the 6th of February 1862 he again inoculated Drs. Bargioni, Rosi, and Passagli, with the blood of a patient named

A. T., age twenty-five, affected with constitutional syphilis, and who had not as yet been subjected to any specific treatment. The blood in this case was drawn with a new lancet from the cephalic vein. The patient was suffering from numerous confluent mucous papules on the left labium, towards the inferior commissure, corresponding to the point at which the primary lesion had appeared. There was in this situation a mucous tubercle developed upon the indurated cicatrix of a primary sore; or else the indurated primary sore had become transformed into a mucous tubercle. Mucous tubercles surrounded the anus. The inguinal glands were indurated and enlarged. A confluent syphilitic eruption existed upon the body, and there was enlargement of the posterior cervical glands. There were also pustules on the head. The blood was taken from the patient's arm, at a part where there was no sign whatever of any eruption. The arm of the patient was washed, and the surgeon washed his own hands. The bandage and vessel destined to receive the blood were new. As the blood was flowing from the cephalic vein, some of it was received on some lint, and this was placed on the upper part of Dr. Bargioni's left arm, where the epidermis had previously been removed, and three transverse incisions made. This point corresponded with the insertion of the deltoid muscle. The same operation was performed upon Drs. Rosi and Passagli; but in the case of Dr. Rosi the blood was already cold when it was applied, and in the case of Dr. Passagli the blood had coagulated.

After the lapse of twenty-four hours, upon removing the dressing, nothing was observed at the seat of the inoculation in Dr. Bargioni's arm except a slight crust formed by the effused blood at the seat of puncture. At the same time the dressing was removed from the arms of the other two physicians, and nothing was seen worthy of observation. Four days afterwards every trace of the different inoculations had disappeared.

On the morning of the 3d of March, Dr. Bargioni announced to Professor Pelizzari that in the centre of the inoculated surface he had noticed a trifling elevation which produced a little itching. Professor Pelizzari examined the arm, and found, at the point indicated, a small papule, of a roundish form, and of a dull-red colour. There was then no induration at the base of the papule, nor any enlargement of the corresponding axillary glands. To prevent its being rubbed, it was covered with some dry charpie and diachylon. Professor Pelizzari examined it daily. On the eighth day the papule had augmented to the size of a twenty-centime piece. On the eleventh day it was covered with a very thin adherent scale, resembling silver paper, which, upon the two succeeding days, became denser and less adherent, and in its central part had commenced to crack. On the fourteenth day two axillary glands became enlarged to the size of nuts, and were moveable and indolent. The papule remained indolent, but its sensibility was slightly increased. On the 19th, pressure upon the crust caused a small amount of seropurulent matter to exude from beneath its edges, the pressure giving a little pain. The axillary glands had now become larger and harder, but continued indolent. There was no induration apparent at the base of the papule. On the 21st the scale was transformed into a true crust, which had commenced to be detached at its edges; and the part beneath was ulcerating. Slight induration now appeared at the base. On the 22d the crust was detached, and a funnel-shaped ulcer presented itself, with elastic and resistent borders, forming an annular induration. These edges were swollen, adherent, and obliquely inclined towards the base of the ulcer, which was covered with a very small amount of secretion. The pain was trifling. Dry charpie only was applied. On the 26th the ulcer had extended itself to the size of a fifty-centime piece. It secreted more, and the surrounding induration was considerably increased. Up to the 4th of April this ulcer remained stationary, but at that date its base appeared to be granulating. The corresponding glands remained swollen, hard, and indolent. There appeared at this date trifling nocturnal pains in the head, and the posterior cervical gland became somewhat enlarged. On April 12th there appeared upon the surface of the body, particularly upon the sides of the chest, and in the hypochondriac regions, spots of irregular form and of rose colour, unattended by any inconvenience to the patient. The glandular swellings of the neck were well marked. This eruption extended itself, and became more confluent during the succeeding days. No constitutional disturbance, heat of skin, nor pruritus, accompanied this eruption, which went on increasing for eight days. On the 20th the cervical glands had increased in size and were harder. The chancre maintained its specific character, and exhibited no tendency to cicatrisation. On the 22d the colour of the eruption was decidedly coppery. Small lenticular papules were now perceived to be mixed with the erythema. The edges of the chancre had begun to granulate. Mercury was now commenced.

The principle illustrated in the foregoing cases, namely, that the blood of a syphilitic patient may, under certain circumstances, communicate the disease to another patient who has not previously had syphilis, had been demonstrated by Cases I., II., and III., recorded by Hunter.

In the experiments which Hunter made he was led to the conclusion that the products of constitutional syphilis were "not capable of acting in some respects on the same body or same state of constitution as that matter does which is produced from a (primary) chancre." He says that the secretion from a chancre generally when absorbed produces a bubo, but that we never find a bubo arising from a secondary syphilitic sore. When there is a venereal ulcer in the throat, no buboes appear in the glands of the neck. Venereal sores on the arms, or even suppurating nodes on the ulna, do not as a rule produce swelling of the axillary glands, although these will very certainly be affected if syphilitic matter from a primary chancre be inoculated on the skin of the arm. Again, when syphilitic blotches or nodes form on the legs and thighs, the specific affection of the glands in the groin, which accompanies primary infection, does not occur.

These considerations so far biassed Hunter's mind, that some of his expressions might lead to the conclusion that the secretions from the secondary syphilitic affections were not inoculable. He mentions, however, that it was asserted in his day that ulcers in the mouths of children derived from constitutional and hereditary disease, produced the same disease upon the nipples of women who suckled them. That is, the children were contaminated either by their mothers or fathers; the child received the disease by hereditary descent; and the nurse was infected by the child. "If," Hunter observes, "it were possible to contaminate once in this way, it would be possible to contaminate for ever. How far the observations upon which the before-mentioned opinion is founded have been made with sufficient accuracy I know not."

Whether or not Hunter was accurate in his conclusion that the syphilitic poison did not act on *the same body* when reinoculated as when received for the first time, we may now contemplate with satisfaction. He drew perfectly logical and accurate conclusions from his experiments, and, I am bold to say, that all subsequent experience has borne out his cautious, and, as far as they went, correct conclusions. We shall have abundant opportunities of seeing that the venereal poison, when inoculated upon the same body as that which produced it, does not produce the same effects as when inoculated upon another non-syphilitic subject. It was somewhat hastily concluded that Hunter's idea was that the products of constitutional syphilis would not be inoculated. The cautious expressions which I have quoted show that he held it an open question, but maintained that, from his experiments performed upon the patients themselves, it appeared not to be so. On the other hand, the cases which he has mentioned, reviewed in the light of more recent observations, clearly show, not only that the products of constitutional disease may be communicated, but that the blood itself may be the means of imparting the disease.

Having considered the inoculation of syphilitic blood by means of the lancet, through a blistered surface, by hypodermic injection, and by the transplantation of teeth, I will now give an instance of the direct communication of syphilis by means of blood, as observed in practice.

CASE VIII.—A nervous gentleman, who had never had syphilis, had contact but not intercourse with a lady who had not quite recovered from her monthly period. There followed violent irritation of the glans penis; a lymphatic vessel on one side of the penis enlarged to the size of a common writing quill; one of the corresponding glands in the groin became as large as a chestnut, and painful. Some days after the frænum on one side became indurated, but there was no induration on the glans penis; a copper-coloured syphilitic eruption followed, and this, in its turn, was followed by mucous tubercles on the lips and tongue.

It was subsequently ascertained that the lady had had an old syphilitic affection; there had also been a slight herpetic eruption on one labium, and on a small part of the skin of the face. The disease in this case was communicated by simple contact, previous to which there was no lesion on the skin or mucous membrane of the gentleman. The lady some days afterwards was carefully examined; there were two or three very small dark-red pimples on the chest; the vagina was perfectly healthy, but there was a copious viscid tenacious discharge from the uterus.

That it was the accidental admixture of blood in this case which determined the infection, even if the blood itself did not convey it, is confirmed by the fact that this lady thought herself perfectly well, and had not the slightest suspicion of having had any disease for some years previously. That the blood, if not the direct means of conveying the syphilitic disease, may be the means of imparting a wonderful morbid energy to some other fluids in the human body may be further illustrated by the now large number of cases in which syphilis has been communicated, when diseased blood, or some of its constituents, has accidentally been inoculated together with the vaccine lymph. I will content myself now with referring to one series only of such cases.

In November 1856 Dr. Marone vaccinated a number of children at Lupara, in Molise. The vaccine lymph was sent in glass tubes, and it was observed that it was mixed with a little blood, which affected its transparency. Dr. Marone says that he does not think it necessary to detail the symptoms of each individual case, as all the children mentioned in the following account displayed nearly the same symptoms, and that, therefore, such an account would involve needless repetition. The disease with which these children were affected showed itself subsequently amongst the nurses and mothers, and even amongst the servants and others who were brought in contact with them.

The names of the children are given, and amount to twenty-three. They came of parents who never had at any time previously shown any symptoms of syphilis; moreover, their general health was good. The children likewise had never shown any symptom of syphilis, either congenital or acquired, previous to the vaccinations in question. The number of vaccinated children was not limited to these; there were some others, of whose cases notes were not preserved.

In some of the children vaccinated the vesicles died slowly away; but afterwards ulcers appeared on the same spots surrounded by hard edges, and accompanied by multiple enlargement and induration of the axillary glands. These ulcerations lasted from a month to a month and a half, without any suppuration of the axillary glands. In other cases the vaccine pustules became covered with crusts, which remained an unusual length of time. These never became firmly cicatrised, and sooner or later reopened, assumed an ulcerated appearance, and were accompanied by the usual axillary complications.

Finally, in some other cases, the first vaccinations not having succeeded, they were repeated, and the pustules which resulted from these subsequent inoculations ran a lengthened and irregular course. In all the children above named, sooner or later, but towards the middle of January, some form of constitutional syphilis developed itself. The symptoms consisted chiefly of eruptions of roseola, crops of papulæ, impetiginoid, and in a few instances pemphigoid, eruptions. At a later period, mucous tubercles appeared on the angles of the lips, on the mucous membrane of the mouth, around the anus, and on the vulva; the post-cervical and inguinal glands were affected; and the children were emaciated generally in proportion to the extent and severity of the syphilitic symptoms.

The breasts of the mothers who suckled these children became affected with ulcers varying in appearance, but always indurated. Some of these ulcers had the appearance of raised and ulcerated mucous tubercles; others were superficial and but slightly indurated; others, again, assumed the appearance of fissures: these were mostly on the nipple, or on the areola immediately surrounding it.

Some of these mothers presented a muco-purulent discharge from the vagina, and a similar discharge had previously been observed from some of the infected children. Few opportunities were afforded of witnessing the source of the discharge in the women, but in two instances mucous tubercles were seen on the neck of the uterus.

Subsequently, and after the lapse of from five to eight weeks, many of the children had, in addition to the symptoms already mentioned, fresh eruptions of roseola, impetigo, psoriasis of the palms of the hands and soles of the feet, and ulcerations between the toes. Some of the women had at this time mucous tubercles about the mouth and genital organs. These women were also affected with chronic enlargement of the post-cervical and axillary glands, which became the size of hazel-nuts, but never passed into suppuration.

After the appearance of the above symptoms, the husbands of some of these unfortunate women became affected with the same disease. They first presented mucous tubercles with a certain amount of induration, which subsequently became ulcerated. These were observed principally upon the lips and angles of the mouth. In some cases ulcerated fissures with hardened base appeared upon the tongue. Between the fourth and eighth months from the first appearance of the disease the husbands had eruptions of the same nature as those which had previously affected their wives. At this period several of them had also characteristic mucous tubercles around the anus, on the scrotum, and on the prepuce.

The disease was observed to spread to other members of the different families, so that Dr. Marone remarks that he had children of both sexes who had not attained the age of puberty with hardened ulcers of the lips and tongue. In cases where these poor people were crowded together in confined and neglected dwellings, whole families became affected with the disease. The same train of symptoms which have been already described as affecting the nurses and husbands, showed themselves in the other members of the respective families.

The treatment adopted was, mercurial frictions to the skin, and mercurial baths of corrosive sublimate. Corrosive sublimate was also in many cases given internally. Under this treatment the disease was greatly modified, and in some instances appeared to have been completely cured. But in the majority of cases the syphilitic symptoms, which at first yielded to the remedies employed, subsequently recurred, and in some instances the disease lasted in this way for upwards of two years and a half. Some of the children died, and apprehensions were entertained that a similar result might follow, in not a few cases, in the adults.

Many of the women who had been infected by their *children*, when they subsequently became pregnant, miscarried; others were prematurely confined with children, who subsequently became syphilitic; and in other cases again the children, when born, were excoriated, and already in a state of incipient putrefaction.

Some of the unfortunate patients who were infected by their own children, communicated the disease to the children of other people, through the medium of the breast. The names of eleven nurses, who in this way, without the slightest suspicion, communicated the disease to the children whom they nursed, are recorded.

The symptoms which appeared in these children were, mucous tubercles and ulcers of an indurated character, first on the lips, and then around the anus. These were followed by well-marked syphilitic roseola and syphilitic papular eruptions.

The two following observations are recorded particularly by Dr. Marone.

A child (L. S.), who had been successfully vaccinated in another part of the country, required a nurse. A woman was selected who at the time appeared healthy, but who in reality had been infected by her own child in the manner above described. Her child had received the disease by vaccino-syphilitic inoculation, and subsequently died. After the nurse had been with L. S. two months, there appeared on this child's mouth mucous tubercles and indurated ulcers, followed by an eruption of roseola over the whole body. The nurse, Dr. Marone ascertained, by personal inspection, to be syphilitic.

Giuseppina Simeone was infected from her own child as in the last recorded case; and feeling on one occasion that her breasts were inconveniently distended, she had them drawn by her own sister, of the age of ten years. This girl (Teresi Valentini) became infected with syphilis; she had mucous tubercles and indurated ulcers on the lips and tongue, and these were followed by the ordinary syphilitic eruptions. The disease lasted in this instance for upwards of two years. In some of the patients seen by Dr. Marone, the syphilitic symptoms continued in children, nurses, and mothers, until April 1859.

Previous to the outbreak of this terrible malady, Dr. Marone states that he had had no experience of syphilis among these villagers. "It is my duty, in the cause of truth," he further adds, "to state fully, that these inhabitants of Lupara were in nowise blind to the connexion between cause and effect on the occasion of this painful occurrence; so that, in fact, I was pointed out as a guilty party in the catastrophe which had occurred; and this is the reason why I was silent at the time, not only on my own account, but also for fear of discrediting one of the most important discoveries of our science. Vaccination was declared to be the foundation of all this misery. Now that I have seen that other surgeons have met with a like series of facts, whatever may happen to myself, I have disregarded personal considerations, and am no longer able to refrain from publishing the above-mentioned details, conceiving it to be a duty that I owe to science."

Dr. Marone draws the following brief conclusions *from his* most interesting and affecting narrative :—

That the syphilitic disease was really transmitted in the above-recorded cases by means of vaccination.

That the children vaccinated suffered first, and became the means of transmitting the disease to others.

That the lymph used for the purpose of vaccination was impure, being mixed with blood, and that the result shows how necessary it is to abstain from using lymph of that description.

I have not myself seen any case of vaccino-syphilis during the progress of the inoculation. The following case, however, fell under my care :—

J. W. T—, was vaccinated at the age of seven months, on the 16th of June 1859, having been perfectly healthy up to that period. His mother appeared a perfectly healthy woman, and stated that her husband had always enjoyed good health. This little patient, when brought to the hospital in the beginning of the year 1861 (having previously been subject to a variety of treatment), presented numerous dark copper-coloured patches over his body, and especially on his lower extremities. These I considered to be syphilitic. On examining the child's arm, the cicatrix left by the vaccination was very apparent, and was slightly harder than the surrounding skin; but that which particularly attracted attention was the existence of chronic enlargement of a gland in the axilla. This was hard, accurately defined, and not tender to the touch. The child was treated by mercury, and recovered. The mother continued to bring him to the hospital long after he had lost his eruption. She also brought the medical certificate of successful vaccination under the compulsory vaccination act.

It may here be noted, that when blood inoculation is referred to, it does not necessarily imply that the inoculated matter contains the red globules of the blood. It is probably the white corpuscles, or some derivative from them, which contains the life-giving power both in healthy and diseased actions. A fluid derived from the blood may therefore be inoculable, so as to produce disease, although not in any way tinged with red particles.

In concluding the consideration of cases of blood-inoculation, where the blood has appeared to give an energy and power to other secretions which they would not otherwise have, I must not omit the comparatively large number of cases in which both medical men and midwives have become infected in attending women during their confinement. I must have seen at least a dozen cases of the kind, although it would be difficult for me to recall even two or three where chancres appeared on the fingers of surgeons or attendants of ordinary patients. This surely does not arise from the fact that contact is more frequent in the former class, nor could it be supposed to depend upon the local manifestations of the disease being more virulent or more general in the second. All experience would give a direct negative to both these suppositions.

I may also note that syphilis, contracted on the hands of surgeons and midwives in attending labours appears to be followed by exceptionally severe results.

Case IX.—A medical man whom I knew attended a patient with whose history he was previously unacquainted. Some time afterwards he showed me a sore on his finger, which I pronounced to be syphilitic. He treated himself in some favourite way of his own; secondary symptoms appeared, the spinal cord became affected, and he ultimately died paraplegic.

Case X.—In another case which came under my observation, a medical man in performing the operation of craniotomy unfortunately had his finger between the bones of the fœtal head when a pain came on, and his finger was grazed by the edges of the bones. After an interval a chancre formed on his finger, which was followed by a protracted course of secondary symptoms. In this case the blood alone, or some constituent of the blood, must have been the means of communicating the disease.

Such cases are of painful interest in a physiological and practical point of view, but they become sometimes much more so in a medico-legal aspect. In a case lately tried in the Court of Queen's Bench, where a surgeon was supposed to have communicated syphilis to a patient in attending her during her confinement, the observations of the Lord Chief Justice contain a brief summary with regard to the legal points.

In addressing the jury, he says,—"I am very glad that you are relieved from deciding one of the most doubtful cases which it has ever been my lot to try. I mean the question of whether any legal liability attaches to the defendant by reason of the unfortunate accident which has happened, through his means, to the female plaintiff. I say which has happened, because I cannot bring myself to doubt that it was through his act, either in the delivery of Mrs. —— of the child which was born, or in the after process which forms the concluding part of the delivery of a woman by a medical man, that somehow or another his diseased finger was brought into contact with her and caused her illness. Of that I think you would in the end have had very little doubt. As to how far his acting in that delivery, under the circumstances in which he was placed, amounted to a legal liability in respect of negligence is another matter. Moral imputation, I think, there can be none upon him. No one supposes for a moment he dreamt at that time that his finger was diseased. But whether, as a medical man, looking to the antecedent circumstances, suspicion ought to have been created in his mind, which, if at once arose, would have been a sufficient reason why he should not engage in such an operation as that, is another and a very difficult question indeed."

If, in such a case, it were ever established that a patient was entitled to recover damages from a medical man who had unconsciously been the means of communicating the disease, the converse ought in all justice to hold; and a medical man ought to be able to recover compensation when infected by a patient. For, under such circumstances, a patient is quite as likely to suspect the existence of syphilis as a surgeon.

The liability of syphilis to be communicated by digital contact has been long observed. In the first treatise published in the English language upon the *Lues venerea*, William Clowes, one of Her Majesty's chirurgeons, in the year 1596, mentions that he had known divers persons infected who were free from any disease of the organs of generation. "So that," he says, "their opinion is not to be observed which affirm that this disease is engendered only by the company of unclean persons; for I have known, not many years past, three good and honest midwives infected with this disease, called lues venerea, by bringing a-bed three infected women of three infected children; which infection was chiefly fixed upon the midwives' fingers and hands."

The same author also notices the hereditary transmission of syphilis or its liability, to be transmitted by the breast. It is not always clear to which he refers. He says, "What should I speak of young sucking children, whereof divers have been grievously vexed with this disease, and some of them a month, two or three months old, and some of them a year old, some four or five years old, and some of them six or seven years old, amongst which I thought it good here to note a certain wench, the daughter of one Saxe, of twelve years of age, the which I cured in 1567, who was infected with this sickness in many parts of her body, having thereon painful nodes or hand swellings and ulcers, with corruption of the bones, and yet no sign in the most suspected parts."

He also quotes the following case from Ambrose Pare. (CASE XI.)—"An honest citizen granted his most chaste wife that she should nurse the child that she was lately delivered of, if she would keep a nurse to be partaker of the travel and pains. The nurse that she took by chance, was infected with lues venerea, therefore she did presently infect the foster-child, and he the mother, and she the husband and the two children which he had daily at his table and bed, not knowing of that poison which he did nourish in his own body and entrails. But when the mother considered and perceived that her child did not profit or prosper by the nourishment, but continually cried and waxed wayward, desired me to tell her the cause of that disease, neither was it any hard matter to do, for his body was full of small pocks, whelkes, and numerous pustules; and the breasts of the nurse and mother being looked on were eroded with virulent ulcers; and the body of the father and his two sons, the one about three years, and the other four years of age, were infected with the like pustules and swellings that the child had; therefore I showed them that they were all infected with the lues venerea, whose beginning, and, as it were, provocations, were spread abroad by the nurse that was hired and her maligne infection. I cured them all, and brought them to health, except the sucking-child, which died in the cure; and the nurse being called before the magistrates was punished in prison and whipped closely, and had been publicly whipped through the streets of the city, if it had not been for the honour of that unfortunate family." Of the mode of communication of such infection I shall have more to say in a future Lecture.

LECTURE II.

In the previous lecture we considered Hunter's idea of the life of the blood, the way in which that ministered to the growth of every part; and, as illustrated by one disease, the way in which the nutrition of every part might be interfered with when that life was touched. In the present lecture we will consider the morbid processes by means of which it is so influenced.

The results produced in the human body by the syphilitic poison are so various, affect a patient's constitution at such different periods, and are apparently so dissimilar in different cases, that it is necessary in studying this disease to distinguish accurately if possible between the essential actions which belong to the disease itself, and the various complications which may arise from lapse of time, from weakness of constitution, from the differences in the manifestations in its earlier and later stages, and especially from effects of accidental complications, or from the modifications produced by its recurrence.

Hunter prefaces his treatise on the venereal disease by the description of four morbid processes or actions, to which he constantly refers in his subsequent remarks. Since his day the nomenclature of these actions has been much varied and altered, but, as conveying any distinct and definite ideas, I do not think that it has been improved. These actions he calls the adhesive inflammation, the suppurative inflammation, ulceration, and mortification.

But in order to make his description of these processes available for our present purpose we must also consider how these actions are modified by the structures in which they occur.

An animal body, Hunter observes, is composed of a variety of substances, and we have an opportunity of observing the comparative progress of diseases in them, and their comparative powers of restoration, and we find that they differ very much from each other in those respects. The healthy and morbid processes in growth, decay, and repair, are, however, regulated by the same living principles, or, if we please, guided by the same hand, in all living beings and in all diseases. In diseases arising from accident, a great difference in the degree of action takes place, according to the nature of the parts implicated, thus bone, tendon, ligament, and cellular membrane, go through their morbid actions more slowly than muscle or skin. This principle is also abundantly illustrated in the different morbid processes produced by venereal diseases.

The same kind of action which produces an effusion of lymph upon the iris, may, if it attacks the skin, be followed by a variety of modifications in the growth and development of the cutis or its coverings. If the cellular membrane be affected an indolent tumour may result, which goes comparatively slowly through its stages, and may terminate in mortification, or perish by a still slower process of molecular necrosis. In the bones the same disease produces an increased development of bone, ulceration, or necrosis. In the lymphatic glands an enlargement is produced, confined strictly to those glands themselves, and not involving, at least in the first instance to any degree, the surrounding structures.

In internal organs the same disease may produce deposits, such as are illustrated in this preparation of syphilitic disease of the lung, and in this of syphilitic deposit in the liver. These deposits may be more or less perfectly absorbed, or more or less perfectly transformed, in the processes of nutrition and growth into tissue, resembling that of the organ in which they occur.

Case XII.—A gentleman has a secondary syphilitic eruption, and symptoms of disease of the lung. For the latter disease he consulted a number of medical men, and was for a long time under treatment. The symptoms, however, persisted. As he wished to go abroad, I was requested by Dr. Tuke to see him for his secondary symptoms before he went, and he was accordingly placed under treatment, which he had not time fully to carry out, but the eruption almost entirely disappeared, and with it all his lung symptoms. These had not returned two years afterwards.

Case XIII.—A patient in the Lock Hospital, many years ago, was pronounced by the physicians of the hospital to have one lung in great part consolidated. I did not know at the time what the disease might be, but I thought I would at all events treat his secondary symptoms. These disappeared, and with them the lung affection, and he was seen some months afterwards in apparently perfect health, following his occupation as an omnibus conductor.

The most important modification of increased action, as far as our present subject is concerned, is that which is observed in mucous membranes as compared with other structures in the body.

Hunter showed that a mucous membrane under violent irritation would, like a serous membrane, produce lymph; but, generally speaking, inflammation of a mucous membrane terminates either in resolution, an increased secretion of mucus, or in suppuration. But although the secretion from the surface of a mucous membrane differs in general from that of a serous membrane, yet the membranes themselves may be affected in a similar way. Effusion of new material may take place in their structures, and in the cellular tissue in contact with them. They may both become infiltrated, thickened, and permanently altered. With regard to the serous membranes, we often see an example of this, as in the case of old omental herniæ; and with regard to the mucous membranes most interesting examples are afforded in illustration of our present subject in the formation of mucous tubercles, and in the more or less permanent thickening of the mucous membrane of the urethra. These will hereafter occupy our attention particularly. I will only at present note that the mucous membrane of the urethra may be thickened by the syphilitic poison, as shown by cases similar to the following, which in practice are not very uncommon.

CASE XIV.—A young gentleman contracted syphilis, followed by secondary symptoms. He had never had gonorrhœa. In the course of the manifestations of the secondary affection the stream of water gradually diminished. He had apparently an ordinary stricture, which was cured by the specific treatment, without the use of instruments. There was no urethral discharge in this case.

When the venereal poison, Hunter observes, is applied to the skin, its effects are generally manifested first in a pimple, which is commonly allowed to scab. The scab is generally pushed off or rubbed off, and one larger than the first forms.

Hunter defines this process of scabbing as the first mode of healing a wound or sore in which inflammation may be greater than where union can be effected, but not nearly so great as where suppuration takes place. We shall, I think, understand Hunter's idea in this respect by considering what he says with regard to the constitutional forms of the disease. "When the poison has got into the blood it there irritates to action. There are produced from that irritation many *local* diseases, as blotches on the skin, or thickening of the periosteum and bones."

These forms of disease he calls compound or constitutional; yet he says they are not strictly so, for every complaint, in consequence of the malady, is truly local, and is produced by the simple application of the poison to the parts; now if this be true, as I believe under given conditions I shall demonstrate it to be, the distinction between what we have been in the habit of calling primary and secondary syphilitic affections in a great measure disappears—and in truth, in uncomplicated cases and in a healthy constitution, where there is no accidental cause of irritation, the local and the constitutional manifestations very much resemble each other, and are in fact of the same nature.

One of the first cases of syphilis which I recollect affords an illustration of this.

CASE XV.—A boy, scarcely arrived at puberty, had a small circular slightly elevated induration on the skin of the penis. This soon became covered by a thin scale. In due course a scaly eruption appeared on the body, and the appearances of these very accurately resembled the primary affection. The disease ran its course without ulceration or suppuration of any part.

CASE XVI.—A gentleman had a small crack on the middle of the fore-finger, which had often caused him some annoyance; on one occasion, after a suspicious intercourse, the edges of the crack became indurated. The induration was, to a very limited extent, perfectly circumscribed, and was accompanied by enlarged glands in the groin. He could hardly believe that it was of any consequence. It was, however, followed by a specific eruption, which continued, on and off, for about three years. But none of the secondary manifestations ulcerated or suppurated.

CASE XVII.—A gentleman had a very slight induration on the skin on the right side of the penis. It was quite unattended by any irritation or ulceration, and so slight that I doubted at first as to its nature. It however persisted, was accompanied by slightly enlarged glands in the groin, and remained accurately circumscribed. I then told him my opinion. He, however, did not think it could be syphilitic, so trifling was it in appearance. In due time, however, a scaly eruption appeared on the body, and continued on and off slightly for several years. This patient had never had gonorrhœa, but as the successive secondary manifestations of syphilis developed themselves he had occasionally a thin discharge from the urethra, unaccompanied by any ardor urine. It has the appearance of thin gruel, and left a stain upon the linen. I have no doubt but that it arose from a secondary inflammation of the mucous membrane of the urethra. Now these, and many more which I could mention, afford illustrations of adhesive inflammation only. In both the primary and the secondary affections an attempt was made to heal by scabbing, but in this disease the attempt does not succeed, and successive scabs or scales are formed. These are all modifications of the adhesive inflammation, which would terminate in resolution if its cause were not persistent. Many drawings of my own and of others demonstrate the fact that what we call the primary disease may go through its stages without any suppuration and without ulceration; and here I would observe that it is a characteristic of both the primary and secondary affections of this disease, that in uncomplicated cases they leave no scars on the body. They are attended with no loss of substance, and, as we shall hereafter see, the artificial inoculations from these affections follow the same rule. It is quite true that it comparatively seldom appears that the syphilitic poison runs its course without some accidental causes of irritation. This may depend upon some other irritating fluid being applied at the time of inoculation, upon want of power in the patient's system, or upon the changes which occur in the original products of the adhesive inflammation. The true characters of this inflammation in primary syphilis are given by Hunter with comprehensive clearness and brevity. The process results in a peculiar thickening, very circumscribed, not diffusing itself gradually and imperceptibly into the surrounding parts, but terminating rather abruptly. This description is perfectly true, whether the induration be scarcely thicker than a layer of cuticle, or whether it involve the whole thickness of the skin. It retains these characters through all its stages, though they may be obscured by accidental circumstances. The secondary affections also maintain this circumscribed character, but are unattended with the peculiar defined induration, for a reason which will hereafter be more fully considered. This induration, according to the Hunterian doctrine, depends upon the effusion of lymph, the product of adhesive inflammation. If the lymph were produced from a non-specific course, it would be organised and converted into a tissue similar to that of the surrounding part, and ultimately anything that was redundant would be absorbed. But the life of this lymph is touched with the same disease as the blood, or the products of the blood from which it is derived. It has a vitiated existence, and tends soon to pass, except in very vigorous constitutions, into a state of degeneration. This may manifest itself in various ways: 1st, By an unhealthy formation of epithelium, producing various kinds of scabs and scales; by unhealthy growth of the hair, nails, or teeth; or by the effusive matter itself undergoing a kind of molecular necrosis, suppuration, or ulceration. These latter processes, although they may occur in all stages of the disease, are most marked when the poison is first received, because then acting on a virgin constitution. Accordingly, we find that the adhesive inflammation first produced, in the majority of cases passes from the adhesive stage to some other form. The product is no longer fit for the life of the part, and is thrown off in one of the forms above mentioned. A double action then goes on, one of adhesive inflammation, accompanied by induration, another of the throwing off of diseased cuticle, or suppuration, or death of the newly formed tissue.

These two consequences, the induration and the destruction of the newly formed tissue, as Babington has observed, seem to be distinct and independent actions, since, although they generally exist in conjunction, they are sometimes found separate, one or the other of them being in some cases wanting. These two processes may sometimes be witnessed in the same case at different times under the influence of treatment. A patient may have a well-marked primary induration, and under the action of mercury the induration will disappear, and a soft sore will only for a time present itself, but after an interval the induration will reappear with its specific characters.

Now all the cases which I have given in the previous and in the present lectures are instances in which the poison of syphilis produced at first the adhesive action only, by means of which the nutrition of parts was more or less perverted, both in the primary and secondary manifestations of the disease. Coinciding with and confirming these practical observations are the results of direct experiment.

Case XVIII.—A patient, under the care of M. Puche, in the Hopital du Midi, was inoculated on the abdomen, on the 29th of January 1861. The inoculated matter was taken from an indurated chancre, which had existed six weeks, and which was followed by secondary symptoms.

On the 19th of February, as no result had appeared, the patient was inoculated from another indurated chancre. On the 8th of March, thirty-nine days after the first inoculation and seventeen after the second, two little pimples appeared on the inoculated spots. The first became excoriated after the lapse of some days, but the second presented on its summit a small point of suppuration. Both presented the specific induration of primary chancres.

On the 10th of April this patient had a general eruption of roseola.

Case XIX.—Rinecker records the following:—On the 13th February 1852 an inoculation was made on Dr. Warnery. This was effected by means of a blister. The blistered surface soon healed. On the 9th of March, however, it became inflamed. Infiltration had taken place in the skin, which was hard and thickened.

On the 21st of March, thirty-five days after the inoculation, and thirteen after the appearance of the specific primary symptoms, the blistered surface was covered by a mass of tubercular excrescences. These were copper-coloured, raised above the surface, and in some places confluent. They were covered for the most part with brown crust, slightly adherent, or with thin grey scales.

Eleven weeks after the inoculation he had severe pain in the head, followed by a syphilitic eruption on the head and face. This was succeeded by inflammation of the soft palate and neighbouring parts, with a superficial exudation of lymph. Ultimately mucous tubercles appeared on the scrotum, the perineum, and on the inside of the thighs.

Case XX.—Related by Baerensprung.—M. C. had never had syphilis. She was inoculated on the right thigh from an indurated chancre in three places. The inoculation was made on the 28th of May 1859. On the 1st of June the inoculated spots appeared as little red points, without any surrounding inflammation. On the 6th of June it was impossible to distinguish them. On the 25th, however, three little red tubercles appeared on the inoculated parts.

On the 5th of July the corresponding glands in the groin were enlarged. The tubercles were also considerably increased in size and ulcerated on their surface. On the 12th two of the tubercles had united, and presented a raised, accurately defined, induration. The inguinal glands were very hard and not painful. On the 20th this ulceration was the size of a franc piece, with a base almost as hard as cartilage. There was no suppuration, but the surface was covered by an adhesive secretion.

On the 29th there was an eruption of roseola and mucous tubercles.

Case XXI.—Recorded by Lindwurm.—M. had never, as far as could be ascertained, had syphilis. She was inoculated with the secretion of two indurated chancres of a patient, who at the same time had secondary symptoms. No immediate results followed. Fifteen days after the inoculated points reappeared as two little red stains, which insensibly became transformed into little reddish-brown tubercles.

On the 28th there was superficial erosion of these little tubercles, followed by excoriations covered by thin brown crusts. On the 8th of July these so-called ulcerations had increased, and were surrounded by slight induration. The corresponding inguinal glands now became enlarged, and subsequently the glands in the opposite groin. A papular eruption followed, especially upon the organs of generation.

Case XXII.—Also recorded by Lindwurm.—A young woman was inoculated with the secretions of the chancres of the previous case on the 10th of July, and again on the 12th. Some small pustules followed these inoculations, and became covered by small scabs. The whole of these inoculations were healed in seven days, namely, on the 17th of July.

On the 29th of July, however, although all traces of the inoculations had previously disappeared, five red tubercles, corresponding with the inoculated points, showed themselves. These tubercles became covered by thin crusts, and converted into indurated chancres.

In the middle of September the manifestations of constitutional syphilis were developed.

Case XXIII.—Recorded by M. Rollet.—A patient was inoculated from an indurated chancre. Eighteen days afterwards a papule was developed, which became ulcerated on its surface. This, as M. Rollet believes, was prevented from being developed into a regular indurated chancre by antisyphilitic treatment.

The examples of artificial inoculation hitherto given are cases in which the inoculated matter was taken from primary syphilitic sores. The following are instances in which the inoculated secretion was taken from some secondary affection.

Case XXIV.—Reported by Gibert.—A patient, affected with lupus of the face, was inoculated on the left arm by means of a blister, with the secretion of mucous papules from the anus of another syphilitic patient. Five days afterwards there was no trace of the effects of the inoculation, and at the expiration of nine days a little redness only was left on the blistered surface.

On the 18th day of the inoculation a raised copper-coloured papule appeared on the inoculated spot. On the 22d day a little exudation appeared on the surface of the papule, which was enlarged.

On the 29th day there was an enlarged gland in the corresponding axilla. On the 32d day a crust was detached from the surface of the papule, which was superficially excoriated.

On the 55th day the papule had become converted into a tubercle, which was superficially indurated, raised, and indurated. Some red spots now appeared on the body. These soon showed themselves also on the anterior surface of the arms, the inside of the thighs, and the inguinal regions.

In another instance (Case XXV.) mentioned by Gibert, the period of incubation between the inoculation and the appearance of the first local symptoms was twenty-five days. A little redness then appeared, followed first by a dry papule, which subsequently became moist and excoriated. It then became covered by a crust and indurated, and ultimately became a tubercle, which ulcerated on its surface, as in the preceding

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case. A corresponding lymphatic gland became enlarged, and thirty-seven days after the inoculation a rash of roseola manifested itself on the patient's body.

Case XXVI.—Reported by Lindwurm.—A patient affected with lupus had a small blister applied to the neck. On the blistered surface a small piece of the mucous membrane of a syphilitic tubercle on the lip was applied. The wound in the neck appeared to heal in five days, but three weeks later the wound again inflamed, and an ulcerated papule appeared. This was followed by enlargement of the cervical glands and copper-coloured blotches.

Case XXVII.—Reported by Wallace.—A young man was inoculated in three places on each thigh from the syphilitic pustules of another patient. In this case the punctures were first made, and the secretions of the pustules applied to them. The punctured spots did not inflame. Thirty days afterwards the patient complained of heat on the inoculated spots. Two of the spots on the left thigh, and all three on the right, presented little raised pimples of a reddish-brown colour, with faint scales on their surface. One of these scales became a scab, and when raised exposed a superficial ulceration. The corresponding inguinal glands were enlarged.

The pimples soon became converted into ulcerated tubercles, which were round, slightly depressed in the centre, and of a dirty white colour, like condylomata. A scaly eruption on the body followed.

Case XXVIII.—Reported by Vidal.—M. Boudeville was inoculated on the 1st of November with the secretion of a pustule from a syphilitic patient; a papule appeared on the 3d, this became covered by a crust, under which some pus formed. This continued until the 15th, when the local inflammation subsided. Thirty-five days afterwards, however, a fresh action commenced. Two fresh pustules made their appearance at the inoculated points, and were very long in healing. Flat lenticular pustules on the head, loss of hair, enlargement of the cervical glands, sore throat, mucous tubercles, and an eruption of roseola followed.

Case XXIX.—Reported by Rinicker.—On the 9th of January 1852 a young physician was inoculated on a small blistered surface with the secretion of a syphilitic eruption of a child. On the 10th no visible effects had followed the inoculation. On the 20th there was a papular eruption around the inoculated spot. This soon disappeared, on the 2d of February a fresh action commenced. The surface which had been blistered was red, itching, and scaly. Twenty-nine days after the inoculation this surface was of a deep red copper-colour, the skin was hard and infiltrated, and presented several papular elevations. On the 10th of February the whole surface which had been blistered was covered with reddish brown, hard tubercles, covered with scales. In spite of the use of mercurial ointment these local affections were followed by ulceration of the palate, of the lower lip, and of the left side of the frœnum of the tongue; and later by mucous tubercles on the scrotum.

Case XXX.—Reported by Waller.—A boy of twelve years of age was inoculated with the matter from a syphilitic patient, on the 6th of August 1850. The matter was placed by means of a small piece of wood and lint on wounds made by a scarificator. At the end of four days the wounds made by the scarificator had healed. On the 15th of August there were some red spots on the inoculated parts, and on the 30th fourteen tubercles presented themselves in the same situation. These were of a dirty red colour, hard to the touch, and almost exactly circular. Some of them presented a slight desquamation. The following days the tubercles increased in size, and all became confluent. When the crust was removed the tubercles appeared slightly excoriated, raised, and flat. They soon again became covered by fresh thin scales, which were of a grey colour and dry. Twenty-seven days after the appearance of these tubercles, and fifty days after the inoculation, a syphilitic eruption appeared, which soon covered the whole body.

M. Rollet has collected together and tabulated twenty-seven cases, in which syphilitic inoculation was performed on patients who had not previously had the disease. Of these the inoculated matter was derived from primary chancres in eight cases, and the average period of incubation before the appearance of any distinctive syphilitic symptoms was about twenty-four days. In ten of the cases the secretion inoculated was derived from mucous tubercles, and the average period of incubation was very nearly the same. From this it appears probable that the disease, whether derived from a primary or secondary source, runs the same course in uncomplicated cases. Now, in all the instances hitherto given, the first appearances have been those belonging to the adhesive form of inflammation. This I regard as the typical mode of the origin of the disease, where there is no accidental cause of irritation, and where the system is infected for the first time.

Jenner long ago warned the profession against supposing that every inoculation produced from a vaccine vescicle conveyed the vaccine disease. That which did he has carefully described. It is essentially the product of the adhesive form of inflammation. The lymph produced which is fit for reinoculation contains no pus, and, indeed, to the common eye, and even with a microscope of low power, appears to contain no globules. Dr. Beale has indeed shown that with a microscope of high power germinal matter may be detected in the vaccine lymph, and in the processes of scabbing and healing, no doubt, real pus globules are often formed. But this in no way militates against the fact that the essential character of the action which produces the lymph, that in its turn will reproduce the same disease, is of the adhesive and not of the suppurative nature. How imperfectly these two actions, so clearly defined by Hunter, have been considered by many continental writers, is demonstrated in reference to our present subject by the indiscriminate use they make of the words vesicle and pustule. In many of their writings the "vaccine pustule" is as often mentioned as the "vaccine vesicle." The two kinds of action produced by syphilitic inoculation have in the same way been confounded and spoken of as if they were the same, and might produce the same results. The works of many continental and of some English authors are full of the descriptions of the origin and course of the so-called syphilitic pustule, of the number of times it may be reproduced, of its value as a means of diagnosis, and the effects of its repeated reproduction on a patient's constitution. Now this form of inoculation is quite distinct from that which we have hitherto considered as having to do with the production of real syphilis. These specific pustules, as they are called, no more resemble real syphilitic inoculations than the abnormal pustules which sometimes follow attempts at revaccination resemble in their pathological effects the morbid process which protects a patient's constitution against the recurrence of the same disease, or against the infection of small-pox.

The cases hitherto given all occurred in virgin constitutions, or in those who had not previously had syphilis; and in them we have the opportunity of recording the disease as developed in healthy patients, and in an uncomplicated condition. The actions both in the primary and secondary manifestations originally commence, if they do not terminate, without suppuration, ulceration, or mortification. The disease commences by an effusion of lymph, which becomes organised and may remain so. The corresponding inguinal glands are affected with the same kind of action. They enlarge but never suppurate, as I believe, from this disease alone. The subsequent eruption of the skin again is of the same nature. First, congestion of capillaries, with some slight formation of new matter, and then different forms of pimples, smaller or larger, distinct or confluent. These all desquamate, and are often covered by scales as thin as silver paper. In their separate and isolated form they have received the name of lichen; when larger, of tubercles; when confluent within a defined space, although distinct at first (as they may be generally observed), the eruption assumes the forms of psoriasis and lepra.

Upon a recurrence of the disease at a later period, or even at its first appearance, in an unhealthy person, the secondary manifestations instead of being of the adhesive character, may directly present the distinctive characters of suppuration, ulceration, or mortification. These facts did not escape the acute observation of Carmichael, and he accordingly describes—I. The papular venereal disease; II. The pustular venereal disease; III. The phagedœnic venereal disease. It is true that he attributes these to different kinds of poison, but that they are essentially the same, and depend upon one and the same disease, appears evident from all these varieties sometimes appearing, as may practically be observed, upon the same person, and from the same infection, at different periods. In particular states of the constitution of the patient there can be no doubt that a primary affection, which would present any of these varieties, would be very likely, indeed, to be followed by secondary manifestations of the same character.

Thus, in group vii., Nos. 220, 221, and 222, in our collection, are represented an eruption of papules and tubercles, the latter passing into suppuration and ulceration.

No. 226 is a coloured lithograph of the forearm, showing a pustular syphilitic eruption. The distribution of the pustules has a corymbous character, and the eruption presents the progressive stages of papule with pustular summit, fully developed pustule, and encrustation with a deep brown scab. In their mature form, and especially in their incrusted stage, the pustules are surrounded with a slightly inflammatory areola. The patient was a young man, aged eighteen, of strumous diathesis, subject to enlarged lymphatic glands, and exposed to vicissitudes of temperature. And the order of succession of the disease was as follows:—In October a chancre; eight weeks after a pustular eruption, with periosteal swellings; a month later sore throat, with tonsillitis; six weeks after this a second eruption of pustules; and three weeks afterwards a third and partial pustular eruption.

No. 227 is a plaster cast of the forearm of the same patient.

No. 228 is a model of the forearm, exhibiting a pustular form of syphilis in a retrogressive stage. The surface is sprinkled over with papulæ in various stages of decline, and with a group of thick brownish-yellow scabs; the largest of the scabs measures nearly half an inch in diameter, and a denuded tubercle one-third of an inch.

Both the primary and secondary manifestations of disease may thus be most materially modified, either by constitutional or local causes, or by the tissue in which they appear. The principal constitutional cause which modifies the first appearance of a real syphilitic inoculation is the existence of what I have, for want of a better term, called the syphilitic fever. This fever is recurrent in its nature, and its consequences will often appear after the lapse of months or years, but its effects are manifested in the most marked manner on its first occurrence. Under the influence of this fever, I need not remind my present audience, that eruptions in great variety will appear on the skin, without any local irritation being applied; but if, in addition, there be local irritation, a circumscribed spot of inflammation may be determined which the local irritation alone would not have produced. Thus the inoculation of common pus, which, under ordinary circumstances, would have produced no effect, may give rise to a pimple, a tubercle, or a pustule. If the pus so inoculated should contain any irritating matter, then we have the joint effect of the constitutional disease determined to the part, and the local irritation produced as the immediate effects of the inoculation. (See Cases XXXV. and XXXVA.) The way in which the existence of the syphilitic fever in its various degrees modifies a real syphilitic inoculation, is a point which, I believe, has not hitherto been sufficiently considered.

The following cases afford some illustration:—

Case XXXI.—A medical student had a typical chancre, which, in all probability, had something like the usual period of incubation. He inoculated himself from what secretion he could get from its surface, before it had become indurated: the inoculation succeeded—a pimple formed, in the apex of which a small quantity of white lymph appeared, which soon became softened down. Both inoculations subsequently became well developed button-shaped chancres. In this instance, as in the second inoculation in Case XVIII., the inoculation was performed while the syphilitic fever was in process of being developed. It had the effect of doing away with the usual period of incubation, but not of preventing the typical induration, which it certainly would have done had the inoculation been performed at a later period, as has been recently so abundantly proved by the so-called process of syphilisation.

CASE XXXII.—A woman who had for some years been about town, but who had no present symptoms of constitutional syphilis, was inoculated with the secretion from an infecting sore; a pimple followed the inoculation; at the expiration of a month the pimple was still there, and was surrounded by a faint copper-coloured eruption. The spots occupied the diameter of about six inches, and faded ultimately of their own accord; no other local or constitutional effect appeared as the result of the inoculation. Here the syphilitic fever, as I read the case, was so far exhausted as to have no power of itself of producing fresh manifestations, but had left an impression upon the system which protected it from any fresh constitutional disturbance, and, at the same time, very materially modified the local symptoms. During the existence of the syphilitic fever, that is to say as long as the patient is liable to fresh manifestations of disease from his first infection, the inoculation of the secretion from a primary or secondary unirritated syphilitic sore, generally produces no result, or a slight superficial irritation which soon subsides, or some abortive form of adhesive inflammation. Inoculations of this sort are analogous to those performed with the vaccine matter on patients who are still under the influence of a previous vaccination. I have over and over again inoculated syphilitic patients with the secretion from an uncomplicated, unirritated, indurated chancre, and always with a negative result. If, however, from any constitutional or other cause, there be much irritation about the parts from which the secretion so inoculated is taken, then a result is produced. But it is very different from those which we have previously considered. If, for instance, an indurated sore be irritated by the application of some savine ointment, as in my original experiments upon this subject, then the inoculation succeeds; or, if the sore has been irritated by the application of any other diseased secretions, or if it be much inflamed from any constitutional or local cause, then again a result is produced; but that result differs in its essential characters from the typical syphilitic inoculation. There is no period of incubation. There is no well-defined induration produced. There is no enlargement of the corresponding inguinal glands, and no fresh constitutional symptoms. The inoculated spot shows at once the character of the suppurative inflammation and not those of the adhesive; any fresh matter that is effused rapidly softens and no longer remains a part of the living body. Unless some phagedœnic action takes place there is little or no loss of the natural structure of the part, and when the inoculation heals, the cuticle is on a level and sometimes above that of the surrounding parts. In this respect there is an essential difference, in my opinion, between this form of inoculation and that from the local suppurating sore, which I shall have hereafter to describe. In the same way secondary syphilitic affections, unless there be some constitutional or accidental cause of irritation, heal without loss of substance, and the cicatrices on the skin leave no permanent depression.

Case XXXIII.—Some matter taken from a patient who had a dense circumscribed induration on the inner prepuce, causing phimoses, accompanied by great discharge, and whose body was covered by a secondary eruption, was inoculated on the abdomen of another patient. A series of seven inoculations were produced. These all commenced as pustules, and produced irregular superficial ulcerations, covered with thick crusts. The edges of the ulcerations were scarcely defined. When they healed, the cuticle covering them was on a level with that of the surrounding skin, and the marks of the inoculations were soon entirely effaced, as those of a secondary syphilitic eruption would have been when cured.

The syphilitic diathesis, like the effects of vaccination, may wear itself out more or less completely, and then a fresh inoculation may take place, which may produce fresh constitutional results.

Case XXXIV.—A married gentleman unfortunately exposed himself to contagion. This was followed by well marked primary syphilis, for which he was thoroughly treated under my own care. About the time when secondary symptoms might have been expected, his general health failed. He lost flesh, was pale, and depressed; a slight eruption appeared on the skin of one arm, which, under treatment, very soon subsided. He had no other specific symptoms for 17 years, when he again exposed himself. A small circular abrasion now appeared on the glans penis, which ultimately became developed into a small tubercle, desquamating on its surface, and continuing for many weeks. The glands in the corresponding groin became enlarged and painful. These symptoms were succeeded now for the first time with well-marked circular copper-coloured patches on various parts of the body. Other cases of this second inoculation of constitutional syphilis I have elsewhere mentioned, and will not here repeat. I shall have to consider this subject again under the head of syphilitic enlargement of the glands.

One form of reinoculation which I have not seen described or referred to by authors, produces a red raised pimple on the mucous membrane, depressed in its centre, and persisting for many weeks. The appearance presented is not unlike a single projection of the surface of a raspberry.

Another most important modification of the results of the application of syphilitic matter depends upon the structure to which it is applied. Hunter showed, as I have said, that the mucous membrane was capable of the adhesive form of inflammation. Lymph may be secreted on its surface as the result of great or prolonged irritation, or effused into its structure, and into that of the submucous tissue. As a rule, however, irritation of a mucous membrane produces suppuration, and the pus cells are thrown off from the surface, together with any irritating matter that may be mixed with it. The mucous membrane does not then become permanently thickened, nor does it ulcerate. The newly formed bioplasts carry their life up with them, and cease to be a part of the living being which produced them.

"It is an invariable effect," according to the Hunterian doctrine, "that when any part of an animal is irritated to a certain degree, it inflames and forms matter, the intention of which is to remove the irritating cause. This process is easily effected when it is on a surface whose nature it is to secrete, but when on a surface whose nature is not to secrete, it then becomes more difficult, and another process must be set up. This is not only the case in common irritations, but also in specific irritations from morbid poisons, as the venereal disease and smallpox. The variolous matter as well as the venereal, produces ulcers on the skin, but when it affects secreting surfaces, a diseased secretion is the consequence, and this is different in different parts; on the tongue, inside of the mouth, uvula, and tonsils, the coagulable lymph is thrown out in the form of sloughs, somewhat similar to the putrid sore throat; but in the fauces, and all down the œsophagus, a thickish fluid, in appearance like matter, is secreted. When irritation is applied to a surface whose cuticle is thin, and where there is a secretion naturally, as the glans penis, then it sometimes only irritates so as to produce a diseased secretion."—(See Case VIII.)

There are three ways, Hunter says, in which a chancre may be produced; first, by the poison being inserted into a wound; secondly, by being applied to a non-secreting surface; and thirdly, by being applied to a common sore. But infection of a patient's system, Hunter held, might be and often was produced by a gonorrhœa independent of a chancre. He says the matter of a gonorrhœa will produce either a gonorrhœa, a chancre, or the lues venerea; and the matter of a chancre will produce either a gonorrhœa, a chancre, or the lues venerea. Now there can be no doubt that Hunter in his descriptions has confounded together several different affections of the urethra, and has classed them together under the common name of gonorrhœa. Yet he owns the difficulty of distinguishing these, and says—"We see many gonorrhœas that begin without any appearance of inflammation, and I have been very much at a loss to determine whether they were venereal or not, for there is a certain class of symptoms common to almost all diseases of the urethra, from which it is difficult to distinguish the few that arise solely from the specific affection." That the very large majority of cases of urethral discharge do not depend either upon syphilis or gonorrhœa may be concluded from the simple consideration of the great variety of causes which will produce such affections. These will be more fully considered hereafter. But if it be conceded that some forms of urethral discharge are really syphilitic, it is no easy matter always to distinguish them from those that are not. Inoculation has been supposed to furnish the means of diagnosis. How far this is the case we will consider in the next Lecture.

LECTURE III.

THE manifestations of secondary syphilitic disease Hunter regarded as produced by the local action of the poison determined to particular parts, after it had circulated with the blood. The action of the poison can be transmitted in a much more direct manner. It may be taken with the point of a lancet, and inoculated upon any part of the skin; and the results of such inoculations are often similar to those produced in the natural course of the disease.

Now, a person may be syphilitic and yet have no manifestation of such a disease at a particular time. It is only at certain periods that such manifestations appear. In chronic cases they may appear only in the spring, or at some more or less irregular periods. There must be some action or excitement in the system before they manifest themselves. In the natural course of the disease this action is the result of what I have termed the syphilitic fever. When a similar action is produced on one or more spots artificially, I will call it local syphilitic irritation.

The syphilitic poison, as I have said, may lie dormant in a patient's system for a long period. Some change will then take place in that patient's constitution, and the syphilitic manifestations will develop themselves. If a patient lives too highly, or if, on the other hand, he is depressed by mental anxiety, or by some other illness, or by bad diet, the syphilitic fever will reappear; or if, in a syphilitic subject, a local irritation be produced, some similar form of disease may occur as would naturally have arisen from a recurrence of the syphilitic fever.

I inoculated (Case XXXV.) a patient who was syphilitic with the pus taken from a wound left in a child after an excision of the knee joint. The pus was apparently perfectly healthy, but, falling upon a syphilitic soil, it produced, after a time, suppuration and ulceration. The appearances, as represented in the drawing, could not, at the time it was taken, be distinguished from those resulting from an ordinary syphilitic inoculation. But if, in addition to this artificial irritation, some fresh syphilitic matter be introduced, then the local action may follow a much more definite and energetic course, but without any fresh syphilitic fever.

Case XXXVa.—Recorded by Vidal.—A patient, nineteen years of age, had an indurated cicatrix, following a chancre which had appeared four or five months previously. There were some mucous tubercles at the anus. A sero-purulent secretion exuded from between the prepuce and the glans on which the chancre formerly existed. This had, however, been healed for three or four months. There were two indolent enlarged glands in the right groin, and one in the left.

On the 24th of July a small blister was applied to the left arm. On the following day, some secretion from the mucous tubercles of another patient was applied to the denuded surface, and the secretion from the same tubercles was again applied on the 26th.

On the 27th an ulcer with sharp perpendicular edges had formed. It was of a yellowish-white colour, secreting a large quantity of well-formed pus of a most offensive odour.

On the 28th the ulcer appeared the same, secreting a large quantity of pus, which still had an offensive smell.

On the 3d of August, some granulations appeared on the base of the ulcer, which was of a red-copper colour.

On the 5th, the ulceration had assumed the appearance of a red patch, with a copper-coloured irregular surface. The circumference of this patch was well defined and not indurated.

On the 9th, the inoculated patch was surrounded by a red-brown circle. Its surface presented the same irregularities, and still yielded a puriform secretion, but less offensive in character.

On the 11th the wound was as large as a franc piece, and sharply defined. The granulations were uniting together, so that the surface was less irregular. It was of a pale red and of a slightly coppery colour.

On the 23d the patch had altered very little, and still secreted a certain quantity of pus.

On the 30th the ulceration was on a level with the surrounding skin, but of the same extent.

In the second week in September, on the inoculated point was a raised patch, dry and slightly indurated.

In order to show that the effect produced was not attributable entirely to the blister, another blister of the same kind was applied to the right arm. On the 1st of August, and on the following day the raised cuticle was removed, and the surface was dressed with blistering ointment.

On the 3d, the blistered surface had suppurated freely. Its surface was red and not excavated. The blistering dressing was renewed.

On the 4th the blistered part was red, its surface not depressed. Blistering ointment repeated.

On the 5th the wound afforded the same appearance. It was red, granular, and without ulceration. Dressing with the blistering ointment repeated.

On the 6th the blisters on both arms were dressed with cerate.

On the 9th the patch on the right arm had begun to heal, and on the 11th it had completely cicatrised.

The blistered surface then, in this case, which was dressed with the secretion from the mucous tubercles, remained open and suppurating from the 25th of July till the beginning of September. The blister on the right arm, in spite of the repeated application of the blistering ointment, remained open only as long as the application of the ointment was continued, and healed permanently in eleven days.

Now, in this instance, as in the very great majority of cases of artificial inoculation on syphilitic subjects, a remarkable difference presents itself in respect to the period at which the results of the inoculation showed themselves, as compared with the cases previously given. In the former there was always a period of incubation of some weeks. The results of the inoculation, when they showed themselves, were of the adhesive character. They were accompanied by corresponding adhesive inflammation of the absorbent glands, and by secondary manifestations, characterised by the adhesive form of inflammation. In the experiment now related, the results of the inoculation appeared almost immediately. They were of the ulcerative character, were followed by no corresponding enlargement of the inguinal glands, and no secondary manifestations. The difference depended upon the fact, that, in the last case, the patient was already syphilitic, or under the influence of the syphilitic fever; and in the other cases the patients had not previously been infected.

The test of inoculation, as a means of diagnosis, demands our serious consideration, as it was only a few years ago almost universally received as the one only sure and certain means of recognising real syphilis, as far as its primary manifestations are concerned. Under the teaching of Ricord, Vidal, and many others, the production of the syphilitic pustule upon inoculation was considered as conclusive. Many writers in our own country have maintained this doctrine with great ability and even greater zeal. In an admirable essay on syphilis, in 1856, by M. De Meric, which received the sanction of the Council of this College, and to which the Jacksonian prize was awarded, the production of the specific pustule is taken as *the* test of a primary syphilitic manifestation; and it is further maintained in that treatise that those diseases only which would afford this test could be infectious. If this were true, it would follow that the whole series of secondary manifestations, in which such inoculations generally fail, are not communicable. M. Ricord, M. Vidal, and many others, collected and published a large number of cases in which the secretion from the urethra was not inoculable upon the patient himself, and they concluded that these cases were therefore none of them syphilitic. To these gentlemen must be accorded the merit of having demonstrated by experiment that the secretion of so-called gonorrhœa differed essentially in its nature from some other secretions which were inoculable upon the patient himself. But does this prove that they were not syphilitic? If so, a typical Hunterian chancre might be proved by the same process not to be syphilitic. Inoculated on the same person, where no accidental irritation is present, it produces no result. The vaccine poison, by the same means, might be proved not to produce any constitutional effect.

That ordinary gonorrhœa is not in itself syphilitic, and does not produce constitutional syphilis, is abundantly proved without inoculation, by simply observing the natural course of the disease; but to conclude that no urethral discharge, unaccompanied by ulceration, and which cannot be inoculated, is syphilitic, is entirely a different question. Now, I have long noticed a peculiar kind of urethral discharge which differs in its nature and symptoms from that of ordinary gonorrhœa. It occurs not very unfrequently in patients suffering from symptoms of constitutional syphilis who have not exposed themselves to any fresh infection, and it also precedes or accompanies well-marked primary disease in those who have. It consists of a viscid greyish secretion, often resembling in appearance thin oatmeal gruel. It is generally unaccompanied by any pain when the water passes, and attracts little of the patient's attention.

When accompanied or followed by a Hunterian chancre, it often does not appear until some days after exposure, and will generally cease as soon as the chancre is developed. Upon the occurrence of this discharge I have predicted the infection of the general system, and this has been followed by a specific induration in one spot on the prepuce, enlargement of the inguinal glands, and syphilitic eruptions over the whole body. It must here be noted that the syphilitic poison, although it be applied over a large surface, generally produces the specific induration at one spot only. The remaining surface may be irritated, as in Case No. VIII., but does not become indurated. The poison is thrown off with the epithelial scales, or by the natural secretion of the part. It is very rarely that an indurated sore exists within the urethra, although the syphilitic poison must often be conveyed there. On the lips of the urethra it not very unfrequently occurs, but in the whole course of my experience I have never known it to originate farther back than a quarter of an inch from the orifice; and, in the great majority of cases, if it affects the urethra at all, it spreads to it from without. Indurated sores on the glans penis are also rare, yet it is exposed to the contact of the poison more than any other part, and generally an irritation, accompanied by abrasion, or increased secretion, is the only local result. The irritation may persist without induration, and may then be one of the signs of constitutional infection. In the same way the peculiar discharge from the urethra, which I have mentioned, may persist either in primary or secondary cases, and be a sign of the infecting nature of the poison which produced it. This secretion, like the secretion of a primary chancre, may not be inoculable upon a person already under the influence of the syphilitic fever, but it does not follow that it would not be inoculable upon another person. Ricord inoculated the product of what he called gonorrhœa over and over again upon the same subject, and produced no result. I have done the same with the secretion of an unirritated Hunterian chancre.

Hunter inoculated the product of what he called gonorrhœa upon himself, and produced a thickened sore, and a train of secondary symptoms which lasted for three years. A similar experiment he performed on a patient in St. George's Hospital, but in this the subsequent history is not given. That this is a very common mode of infection, universal experience, if duly considered, will attest. It happens every day that a young gentleman, who has never had syphilis, will expose himself to contagion with a woman of the town who has long ceased to have any outward manifestations of disease, and after the lapse of some days, will have a discharge such as I have described; or after a still longer period of incubation, some adhesive form of inflammation will appear on the unabraded skin of the penis, or upon the internal prepuce. The glands in the groin will subsequently become enlarged in a peculiar way, which I have called the amygdaloid condition, and in due course the whole train of secondary symptoms will follow. I have seen a number of patients who fancied that they were safe in having intercourse with women who had recently been examined in "protected districts," and who nevertheless have had the train of symptoms which I have described. And in truth, if a woman has no objective signs of syphilis except a vaginal or uterine discharge, and will take the trouble to wash herself before being examined, it would be exceedingly difficult, if not impossible, for a surgeon to say whether she were syphilitic or not. The only reliable symptom, under the circumstances, is the persistence of the amygdaloid glands in the groin. But even this may be fallacious in consequence of a great variety of circumstances, to which I shall hereafter refer.

It has often been said that Hunter's experiment is of no value when weighed in the balance against the immense number of experiments made by others, in which a negative result has been obtained. But, as I have stated, the latter were not the same, but essentially different experiments; and, as proving anything, I would, as a disciple of Hunter's, and with some degree of national pride, point to Hunter's experiments as far more valuable than all the others to which I have referred, put together.

The urethral discharge which I have described, instead of being one of the first symptoms of syphilitic affection, will sometimes appear as one of its secondary manifestations. A gentleman, who is, as he believes, free from syphilitic symptoms, but who probably has some remaining induration of the inguinal glands, will marry. Shortly after his marriage some irritation will appear about the penis, accompanied by an increased mucous discharge from the urethra. After the lapse of a short time the wife will complain of itching and irritation of the mucous membrane, at the orifice of the vagina. There will be an increased mucous discharge of a greyish colour; and after the next menstrual period, and sometimes before, an abrasion or induration will be discovered, and this will be followed by the appearance of amygdaloid glands in the groin and constitutional syphilis. Such cases must have occurred to those who hold Ricord's views that syphilis could only be communicated through contact with the secretion of a primary sore; and, as a matter of fact, we know that in many cases a husband, who found his wife diseased after marriage, has asked his medical attendant whether she could have become so without being exposed to the contact of primary syphilis. The answer of those who held M. Ricord's opinion, and of M. Ricord himself, would be that they could not. If the husband believed this, he would have no alternative but to consider that his wife had been unfaithful. The most cruel injustice has in this way, through an erroneous pathology, been inflicted. The husband has not only communicated disease to his wife, but has accused her of having contracted the disease elsewhere. He has destroyed her bodily health, and has at the same time inflicted a much more severe and permanent injury on her mind.

It sometimes, although more rarely, happens that the husband is the party who suffers from these mistakes. I have been engaged in more than one trial where the wife or her friends have sought to obtain a divorce on the ground of the husband having contracted disease after his marriage, and communicated it to his wife. It has been given in evidence that, in order to do so, he must have had some primary disease, but the whole class of cases to which I am now referring show that secondary affections, of the existence of which the husband may have been unconscious at the time of his marriage, may recur, and be the means of imparting constitutional syphilitic disease in the wife. This may happen before impregnation, although it is much more common afterwards.

Case XXXVI.—A gentleman and lady were married in the year 1859. Two months afterwards the wife experienced some irritation about the labia, which was followed by specific enlargement of the inguinal glands on both sides. Four months later, there was a well-marked syphilitic eruption on the body, and enlargement of the posterior cervical glands. There was also at this time the remains of an indurated tubercle, which did not appear to have ulcerated, on the left labium, and the inguinal glands remained enlarged, but not tender nor inflamed. This patient had not become pregnant; the husband had very slight remains of an eruption, the result of syphilis contracted four years previously. There was also very slight remaining induration in the site of the original disease, and the skin in the immediate neighbourhood had been, since his marriage, occasionally inflamed and excoriated. In this case the friends of the lady, having received imperfect medical information, accused the husband of having contracted fresh disease after his marriage.

Case XXXVII.—A gentleman who, it afterwards turned out, was suffering from secondary symptoms, married in the summer of 1872. It was not until three weeks afterwards that he had full intercourse with his wife. He believed that he had no discharge whatever, but a sore formed without induration on the prepuce. This probably arose from mechanical injury, as the wife was not proportionately developed. Soon after her marriage the wife felt sore, and had a yellow discharge, which stained her linen, and was accompanied with ardor urinæ. This lady then became unwell, and the tenderness of the external parts became excessive, so that all intercourse had to be given up. I saw this gentleman and lady in October 1872. The gentleman had no apparent discharge from the urethra, but was covered by a syphilitic rash, and had the sore above mentioned upon the prepuce. The lady had an indurated sore, glazed, at the fourchette and another on the clitoris: both these were excessively painful, and the inguinal glands were specifically enlarged. This gentleman at the time of his marriage had nothing, as far as he knew, the matter with him. That the discharge in the lady was not gonorrhœal is proved, independently of other circumstances, by its not being communicated to her husband; but there can be little doubt that it might have produced syphilis if inoculated upon a person previously unaffected.

The observations made by authors with regard to inoculations have had almost exclusive reference to the skin. The effects produced upon mucous membranes when subject to the action of the syphilitic poison, as indeed, to any irritation, is peculiar. The newly-formed matter in them, instead of remaining, for a time at least, part of the living being, is at once thrown off in the shape of mucous or pus cells. The consequence is, that it is only in rare and exceptional cases that we get here any well-marked and defined induration in consequence of the application of the syphilitic poison. A mucous membrane that has been long exposed partakes more or less of the nature of the skin. Hæmorrhoidal tumours that have long been allowed to remain prolapsed, will become covered with cuticle; an analogous action may be observed on the roots of trees which have been long exposed to the action of the air, they will become covered with bark, and very much resemble the branches in appearance.

In a case lately under my care in St. George's Hospital, a patient who had been confined six months previously, had a ruptured perineum; the uterus had come down at the time of the confinement, and remained down ever since. A great part of the mucous membrane of the vagina had remained protruded with it, and this had all assumed the appearance of thin skin covered with cuticle.

Mucous membranes that have been long exposed or long irritated will resemble the skin not only in appearance but also in their diseased actions. In both primary and secondary syphilitic disease, portions of mucous membrane which have been long exposed, or have been subject to much irritation, will become infiltrated and indurated, very much in the same way as the skin, and there will not be much difference between the actions then produced and in those portions of skin with which they are naturally in contact. We have thus produced upon exposed mucous membranes and upon the thinner parts of the skin the class of symptoms which have gone by the name of mucous tubercles. On the glans penis, also, if it has been long left uncovered by the prepuce, the syphilitic poison will produce infiltration, induration, and a genuine Hunterian chancre may be the result. Such cases, however, are exceptional. Neither within the vagina, or on the os uteri, or in the urethra, or upon a glans penis that has been kept covered, nor in fact on any part of the mucous membrane that is not habitually exposed, do we often find primary indurated sores. With regard to women, this fact was noticed particularly by the late Mr. Babington. He says, indurated chancres do occasionally occur within the vagina, being situated either on the vagina or on the os uteri itself. Sores on these internal parts are extremely rare, notwithstanding the degree in which they are exposed to the contact of the venereal virus during coition. It is not, however, that the mucous membranes are not affected by the syphilitic poison, but that the manifestations of its action are there different to what they would be on the skin. I have here a drawing of a well-defined indurated chancre on the eyelid, extending to the very edge of the skin. It is impossible but that some of the secretion which originally produced it, or which came from its surface, must have spread beyond the well-defined limit of the skin; yet the induration stopped exactly at this line. Another drawing shows well-marked induration of the prepuce, but the corresponding portion of the glans penis is affected, but quite in a different way. It was red, inflamed, covered by an unnatural amount of secretion, but not indurated. From these illustrations, then, and from common observation, we may safely conclude that the syphilitic poison does not affect the mucous membrane as a rule, in the same way as it affects the skin; but it would be a great error to suppose that it does not produce its specific effect upon those membranes. Instead of lymph being secreted, which remains a part of the person who produced it, globules containing their own healthy and diseased actions are thrown off, and these diseased actions may by them be reproduced in kind.

The doctrine illustrated by these remarks is summed up by Hunter. He says, in all the outlets of the body where the adhesive inflammation would be hurtful, irritation first only produces the suppurative inflammation, but if it be carried farther, the adhesive inflammation will take place. The product of ordinary inflammation in a mucous membrane has an outlet, and not only thickening of the part, but ulceration, is avoided. As in such cases no parts are destroyed, granulations also are excluded.

The secretions from diseased mucous membranes do not then generally tend to produce either the adhesive or the ulcerative inflammation in the parts in which they are generated; neither do they, as a rule, tend to produce those actions in parts to which they are accidentally or artificially applied. The globules thrown off are not of the adhesive nature; they tend to generate other corpuscles similar to themselves, but not of a different nature. And this is probably the reason why so few artificial inoculations on the skin from the secretions of mucous membranes have been successful; and when we consider, in addition, the very great number of causes which may produce a vaginal discharge, a further explanation is given of the comparatively few cases in which that discharge has been inoculated, so as to produce any definite result. The comparative little value of such inoculations, in proving the real syphilitic nature of a secretion when inoculated upon the same person, we have fully considered. But evidence, as far as it goes, is not wanting with regard to the occasional inoculability of these discharges.

Mr. Morgan of Dublin has lately published a very remarkable series of cases, in which he has inoculated the vaginal discharge on syphilitic patients with very positive results. From these, in illustration of the Hunterian doctrine, that the discharge from a mucous membrane may be inoculated so as to produce a syphilitic sore, I select the following:—

Case XXXVIII.—A patient, who had for five months been under absolute restriction, and had no sore for over four months, had a papular rash, loss of hair, and patchy ulceration of the throat. A muco-purulent discharge still existed from the vagina. From this Mr. Morgan inoculated a patient in whom secondary symptoms were appearing for the first time. A characteristic pustule, followed by a well-marked sore, was the result.

Case XXXIX.—On the 25th of June Mr. Morgan inoculated the vaginal secretion, now hardly purulent, of a patient who had been in hospital since the 21st of March previously, and produced characteristic pustules and sores. The patient from whom the discharge was taken had been thoroughly examined as early as the 23d of May, in order to see that there was not the slightest breach of surface, or even irritation, in the vagina or the neck of the uterus.

CASE XL.—A girl, eight years of age, who was suffering from condylomata of the vulva and anus, and an ulceration of a gummatous character on the arm, was inoculated from the vaginal discharge of another patient. The history pointed to the young patient having contracted the disease from her sister with whom she slept. The patient who supplied the secretion was repeatedly examined with the speculum, and no sore, either uterine or vaginal, could be discovered. The inoculation produced the characteristic pustule, the secretion of which was again re-inoculated.

Mr. Morgan gives twelve series of inoculations, which, he says, he has selected from many other cases under treatment, and adds this remarkable observation: It seems to be essential that the system shall be under the influence of the constitutional poison, in order that the vaginal discharge may be capable of producing the characteristic pustule and sore.

Now, in all Mr. Morgan's experiments, the result was direct and immediate. But if what I have said with regard to the syphilitic diathesis, or fever wearing itself out or being cured, be correct, we might naturally expect the period of incubation which belongs to real syphilis to manifest itself after inoculation in patients where this has happened.

CASE XLI.—I inoculated a patient whom I had reason to believe had been syphilitic, but who had no present manifestations of the disease, with the secretion from an inflamed mucous membrane. The inoculation appeared to produce no result, when about a month after a pimple, surrounded by a dark-red zone, appeared on the inoculated spot, and this partook rather of the adhesive than of the suppurative character. The inoculation was made on the 29th of January, and the appearances are represented in a drawing made on the 8th of March following.

Mr. Gascoyen, surgeon to the Lock Hospital, was good enough, at my request, to inoculate the secretions of some patients affected with syphilis from their own vaginal discharge. These inoculations failed as a rule, but in one (CASE XLII.), in which the secretion was carefully taken from the upper part of the vagina on a small piece of card held by a pair of long forceps through a speculum, the inoculations succeeded. In this case the patient apparently had the disease for the first time. Her skin was covered by an eruption of roseola, and there were some mucous tubercles on the outside of the vulva. The drawings of the inoculations made by Dr. Westmacott are preserved, and they present this peculiarity in contradistinction to those of the local suppurating sore, which I shall have hereafter to describe. There is in these inoculations, as from those produced by inoculations from other primary and secondary syphilitic sources, a certain amount of solid matter effused. This does not terminate abruptly, as it would do in a primary syphilitic sore, but gradually fades into the consistency of the surrounding parts, and the inoculations do not present the sharp well-defined ulceration of the local suppurating sore.

It may be said in this case that some of the secretion from the mucous tubercles had in some way reached the upper part of the vagina; but it would be equally easy to say that where the secretions of mucous tubercles have been inoculated, some secretion from some part of a mucous membrane may have reached them. Inoculations from mucous membranes, where patients have not before had syphilis, as I have said, is sufficiently common. I will here add a few practical illustrations, for which I am indebted to Dr. Marston.

Case XLIII.—Two men were admitted into hospital with gonorrhœa, Br. A. and Gr. S. At the time of this occurrence, Dr. Marston had the power to report any case of venereal, and upon the woman being pointed out by the affected individual to the police, she was handed over for inspection and treatment. The men came to hospital within forty-eight hours of each other, and were placed in contiguous beds. Gr. S. went with the police, and pointed out the source of his contagion. Br. A. went upon the same errand to the same house, and found the woman already removed. Gr. S. said that, to their mutual surprise, they discovered that it was the same woman in each case. Both suffered from all the symptoms of gonorrhœa, and there was no suspicion to the contrary. Br. A. had suffered from syphilis before, Gr. S. never. (This statement is made from their own words, and after a minute examination of their persons.) After remaining in hospital a long time, Br. A. was discharged cured, and no further symptoms, so far as could be traced, appeared in his case. Gr. S.'s recovery was delayed from gleet and irritable bladder, for which instruments (No. 10 and 12) were used. They passed without difficulty, local tenderness, or hæmorrhage. After appearing anæmic and in ill-health, Gr. S. had sore throat (ulcerated tonsils) and a guttural voice; subsequently papules appeared on the inside of the lips and the buccal membrane, coincidently with psoriasis palmaris and "nocturnal rheumatism." The inguinal glands were slightly enlarged symmetrically. For these symptoms he took the iodides of mercury and potassium, with mercurial vapour bath, by which means, after many relapses, he was cured. The case was shown to some surgeons, who, of course, suggested a concealéd chancre ("chancre larvé" of Ricord.) Dr. Marston passed sounds, and tried to discover a localised induration, without avail. If anything, perhaps the canal was firmer and more swollen to the touch than usual. Some urethral discharge was inoculated in the skin of the thigh (at the time it was gleety and apparently a prostatic secretion) without any effect.

The woman in this case, Dr. Marston learnt from the civil surgeon, had a vaginal discharge, but no primary ulcer that he could find. She was, however, suffering from acne of the face and a cutaneous syphilide.

Case XLIV.—Gr. C., five or six days after connection, had urethral discharge, and was admitted as suffering under "gonorrhœa" by another medical officer. After the use of nitrate of silver injections and salines, as abortive treatment, he rapidly improved, but a slight gleet remained, for which the penis was blistered. This urethral discharge afterwards augmented in amount, and became most copious and purulent, and symptoms of cystitis set in. After having been in hospital eight weeks, he came under Dr. Marston's care. Upon the dorsum of the penis were two large, oval, indolent, indurated, raised lumps. They resembled chancres. The glands of both inguinal regions were passively enlarged. In answer to questions, and without any suggestion whatever as to their nature, he said, "One has existed about forty-five, and the other about forty-six days, as near as I can tell. They gradually became and remained as you now see them; and they came, I think, from the discharge getting in contact with two sore places from which the skin had been removed after blistering." In seventeen days both healed under the influence of mercury. A papular syphilide afterwards appeared upon the trunk. By a later report it appeared that this man had again passed under treatment for marked anæmia, and ecthymatous sores upon the extremities.

Case XLV.—Gr. R. was admitted with gonorrhœa (?). He remained in hospital an unusually long period, from having suffered from gleet and irritable bladder, without stricture, followed by a peculiar form of paralysis of the left lower extremity, which was supposed to be an illustration of the "reflex paralysis" described by Brown-Séquard. Continuing very anæmic, he was sent to a sanitarium for a time, without any benefit; and, pending a medical board, he was discharged from hospital, and put upon "convalescent duty." No suspicion whatever existed as to his having suffered from anything more than an ordinary, though protracted, attack of gonorrhœa, with some of the usual sequelæ. As the symptoms of local paralysis excited much interest, he was more than commonly watched. It was discovered, however, by accident, that some ecthymatous and rupial looking sores had appeared upon the extremities. Since that period he had suffered from a mixed cutaneous syphilide, papules upon the lips, copper-coloured stains, and indolent glandular swellings, with rheumatism and marked cachexia, for all which symptoms he has received the greatest benefit (cure?) from mercurial vapour baths, with the iodides of potassium and iron. In 1854, before enlistment, he had a venereal sore upon the penis.

Case XLVI.—A gunner caught a gonorrhœa in Gibraltar, in 1860. It proved very chronic indeed, and passed into gleet; the inguinal glands enlarged symmetrically, and one suppurated. Urethral chancre was suspected, and mercury was given him. He slowly recovered from his urethral discharge, was invalided to England, remained in Woolwich Hospital for some time, and in September 1861 joined his brigade. Marked cachexia; numerous indurated glands in either groin, some of which inflamed, but did not suppurate. After he had remained free from any urethral discharge for six or eight months, it returned, copious in amount, and remained for six or seven days. At the same time he had sore throat (but no ulcer), nocturnal pains and lichen of the trunk, with engorgement of the post-cervical glands. No. 12 catheter passed easily, and no local sore or induration was detected.

CASE XLVII.—Grs. H. and R., in January 1859, had connection with the same woman; both suffered from urethral discharge (simulating gonorrhœa) and chancre, as the products. Gr. R.—Date of appearance of the disease uncertain, but he is positive that seven days elapsed before any symptom appeared. At first he had an erosion upon the inner aspect of the prepuce, which was "burnt with caustic." It became a regular Hunterian chancre, for which he remained in hospital seventy-five days. One gland in the groin suppurated. Three days after the appearance of the sore, he got urethral discharge, which continued for a month. Treated with mercury. Syphilitic rheumatism followed three months afterwards, since which time he says he has never felt well. A slight scaly eruption appeared upon the arms at one time, which went away, and he had sore throat, which also passed off without treatment. Now (January 1862), he is very anæmic, the glands in either groin are enlarged, and he complains of a pain, having nocturnal exacerbations, extending from the epigastrium round the left lower ribs to the left shoulder. His conjunctivæ are slightly yellow. This pain has lasted for months, and been variously treated. It was supposed to be due to dyspepsia. "In fact, sir, since that venereal I have never been the same man." He was treated with the iodides of iron and potassium, and a mercurial vapour bath twice a week, and cured.

Mr. Pearson's opinion with reference to communicability of urethral discharge may not be uninteresting. He says,—"We have seen so many cases of gonorrhœa communicating syphilis, as to leave very little doubt in our mind of this being the case. We have seen several instances of venereal symptoms following gonorrhœa, and where persons having gonorrhœa have communicated venereal symptoms." That the infection in these cases did not depend upon a chancre within the urethra, I think is shown by the extreme rarity with which such chancres exist; and, with regard to the infecting form of chancre, I should say it is almost if not entirely unknown. Hunter opened the urethra in many cases where he supposed persons were suffering from a discharge connected with syphilis, but never found any ulceration.

Swediaur's opinion is also well worth our consideration. He remarks,—"That the happiness and tranquillity of many families, not less than the fatal effects arising from the improper treatment of this disease, seem to demand the most careful researches upon the subject." He had convinced himself, from well-authenticated experiments, and numerous cases attended with the greatest care, that those who maintained that gonorrhœa and syphilis were always the effect of the same poison, and those who held an opposite opinion, were both wrong in generalising too much, and in speaking so positively and so lightly on a point of so much importance to the physician and the patient. He had, as he believed, proved to demonstration that blennorrhagia of the genitals of the two sexes owed its origin sometimes to the venereal or syphilitic virus properly so called, and sometimes to some other acrimony applied to the urethra or the vagina. Several cases are related which go to prove that a discharge may be syphilitic or produced by the syphilitic virus, and several instances are also given to show that blennorrhagia is very different in its origin and nature from the disease produced by the syphilitic virus. "It will easily be conceived," he says, "of what importance this distinction is in practice, when, on the one hand, we see practitioners treat all gonorrhœas as venereal (syphilitic) with mercurials; and, on the other, when by an ill-founded theory they suffer the syphilitic virus to be communicated, and the disorder propagated through whole families, without giving themselves any trouble as to the unfortunate results."

From what has now been said, I conclude that the product of primary syphilis is inoculable artificially, so as to produce the same effects as when it was naturally acquired.

That the results of secondary syphilitic manifestations are inoculable, so as to produce the same results.

That the secretions from mucous membranes in syphilitic patients are very often the means of communicating syphilis, and may sometimes be artificially inoculated.

If these propositions be true, it follows that Hunter was right in saying that a urethral discharge might be inoculated so as to produce constitutional syphilis; that Ricord was right in saying that ordinary gonorrhœa is a non-syphilitic disease; that Hunter was wrong in as far as he implied that the secretion of an ordinary gonorrhœa could be inoculated so as to produce syphilis; that Ricord was wrong in supposing that no urethral discharge which did not proceed from a chancre could be so inoculated; that they were both wrong in supposing that the secretions of secondary syphilitic manifestations, including certain forms of urethral discharge, could not be inoculated so as to produce syphilis upon another person not previously infected.

LECTURE IV.

TREATMENT OF SYPHILIS.

Boerhaave, in a treatise on the venereal disease, states that he had not long been engaged in the practice of physic before the continual novelty of cases which occurred to him made him wish that all his reading had been spent among such authors only who, when they had well described a disease, did not omit to point out its most certain remedies. The new symptoms which arise daily in the self-same disease, and the wonderful disparity among the usual ones, must necessarily leave a physician in the greatest doubt and perplexity, especially when the disease is grown desperate through neglect, or when, by a wrong treatment, it is become the patient's torment and the physician's reproach. All practitioners, he says, agree that no disorder is more liable to these mischiefs than that which we call the French disease. In the management of this malady things sometimes occur which the longest observation is never able to discern; and the oldest artist must, at least, sometimes confess himself a mere novice, and own his ignorance both of the nature of the complaint and its cure. Moreover, it is not uncommon in this disorder to be apprised of things which, though they seem as trifles hardly worth regarding, yet shall soon produce a train of horrible consequences. Notwithstanding, he adds, I myself have been a practitioner in this disease for above six-and-thirty years, and although I had always the opportunity of acquainting myself with the nature of this anomalous evil, and made good use of it too, yet has every year produced me something new and unobserved before. Acting upon Boerhaave's suggestion, I shall endeavour to give the treatment, general and local, of the different forms of disease which we shall have to consider; and in the whole range of medicine there are none which yield so readily to treatment as those which form the subjects of these Lectures.

The morbid changes observed in constitutional syphilis have been divided into primary, secondary, and tertiary. In uncomplicated forms of the disease, as we have seen, there is no great difference in the kind of action between the primary and secondary symptoms—and the classification of secondary and tertiary syphilis is by no means an easy task. Some have regarded affections of the skin and mucous membranes as secondary, while diseases of internal parts, including the bones, they look upon as tertiary. The secondary symptoms have been supposed to require mercurial treatment; while for the so-called tertiary symptoms iodine, sarsaparilla, and tonics generally have been recommended. Practically, such distinctions are, in my opinion, of little value, and often lead medical men to treat the name which they may happen to apply in a particular case rather than the disease itself. As far as any such classification can be made, that adopted by Mr. Lane is perhaps the best. Among the secondary affections of the skin he classes roseola, lichen, tubercles that may desquamate, ulcerate, or encrust; psoriasis, lepra, and ecthyma. Among the affections of mucous or semi-mucous membranes there are the white aphthous-looking ulcers on the tonsils, soft palate, and fauces, superficial ulcers on the sides of the tongue and angles of the mouth, mucous tubercles or condylomata on semi-mucous surfaces, and deep excavated ulcers of the tonsils. To these are added iritis, muscular pains, arthritic pains, pains in bones, periostitis and nodes. In these affections Mr. Lane considers that the venereal poison still exists, and that it may be communicated by contact and transmitted to the offspring. In such cases Mr. Lane considers mercury as beneficial, and iodine of but little or no value.

Tertiary syphilis, affections of the fibrous membranes, include periostitis, resulting in nodes, caries and necrosis of bones; inflammation of fibrous tissues of joints, arthritis; inflammation of the fibrous tissues of the testicles, orchitis; inflammation of the fibrous tissues of the globe of the eye, and sclerotitis.

Among the affections of the skin and mucous membranes in tertiary syphilis are classed rupia and cachetic ulcers of the skin, rapid ulceration of the soft palate, fauces, pharynx and larynx, rapid ulceration of the rectum, vagina, nymphæ, and labia.

In the same class are included deposits of fibro-plastic lymph, imperfectly organised—first, in the areolar tissue, constituting sub-cutaneous or sub-mucous tubercles; and, secondly, in the muscular tissue. These are frequently met with in the tongue, and occasionally in other muscles; and similar deposits are met with, as *post mortem* appearances, in the liver, spleen, kidneys, lungs, and other viscera. To this list Mr. Lane adds lardaceous and waxy deposits, occasionally found in the *post mortem* examination of the bodies of persons of dissipated habits.

The pathological changes in this class occasionally, according to Mr. Lane's view, present themselves in patients who have passed through the primary and secondary stages of syphilis, but in whom the venereal poison no longer exists, and therefore cannot be transmitted. The remedies required in these affections are especially iodine and sarsaparilla,—and mercury, in Mr. Lane's opinion, is injurious.

Some such classification as the above is necessary for systematic teaching, and that now given I believe to be perhaps the most convenient that has yet appeared. But I am satisfied that no such classification can be practically relied upon, either as a matter of pathology or with regard to treatment. A node, for instance, which is generally supposed to be among the latest manifestations, will sometimes be the first symptom to attract attention; and, on the other hand, I have seen a well-developed syphilitic scaly eruption on the arm of an Indian officer who had had no primary affection for seven and twenty years.

The morbid processes which Hunter has described, without reference to time in this as in other diseases, are those which are the most true to nature, and which furnish the most reliable indications for practice.

At whatever period of the disease we find the existence of the specific adhesive form of action, whether developing itself as a primary manifestation in the shape of an indurated sore, or as an affection of the inguinal glands, or in the form of papular, tubercular, or scaly eruptions on the body, mercury is, in my opinion, sure, if properly administered, to be beneficial.

When the disease, whether primary, secondary, or tertiary, has a tendency to produce suppuration in the affected parts, mercury should be administered with great caution.

The same may be said as a rule where the affected parts run rapidly into ulceration, although in some of these, to be subsequently considered, one form of mercurial treatment is wonderfully efficacious.

Where mortification takes place, whether affecting minute or larger portions of the tissues of the body, mercury given so as to affect the constitution is, as a rule, injurious.

Mr. Pearson states that his opportunities of administering mercury had not extended to less than 20,000 cases, and that he felt himself fully authorised to assert that it is a remedy always to be confided in, under every form of lues venerea; and that, where we have only that one disease to contend with, that it is a certain antidote, and as safe in its operation as any other active medicine drawn from the vegetable or mineral kingdom. "Let me not be misunderstood," he continues, "to say that it is a certain and safe remedy in the hands of any one who undertakes to dispense it. Quite the contrary:—for a multitude of indisputable proofs might be adduced, that ignorance and error often renders it one of the most precarious and mischievous medicines in use." Mr. Pearson goes on to say, "the superior efficacy of mercury, as the genuine antidote of syphilis, is sanctioned by the experience of 300 years; and, what is a circumstance deserving of consideration, not one medicine besides, derived from the animal, vegetable, or mineral kingdom, has maintained its credit, with men actually employed in extensive practice, during a tenth part of that period. Perhaps it would not be rash to assert that no other medicine has maintained a general good reputation, as a specific against the venereal disease, beyond the lifetime of its first proposer.

"Men may amuse themselves by declaiming against mercury, as an uncertain remedy; they may utter querulous details of its baneful effects, and retail tragical stories of its malignant influence on the body and mind of those who use it; but surely all this turbulent eloquence may be directed with equal advantage, not only against every potent article of the materia medica, but against the very aliment by which we are sustained.

"Almost every department of physical science contains propositions which require exceptions, or against which objections may be brought that scarcely admit of a satisfactory solution. Yet, notwithstanding these, philosophers do not suppose it necessary to abandon duly verified axioms, because a few phenomena, not perfectly understood, seem to militate against them.

"He who shall discard all general rules, because they admit exceptions, ought likewise, for the sake of consistency, to renounce all science, because human knowledge is fallible and imperfect."

In recommending the use of mercury as an antivenereal remedy, before all others yet introduced into practice, Mr. Pearson says that he neither intends "to conceal or deny that real inconveniences are sometimes connected with the administration of that medicine. There are certain peculiarities of constitution, where its irritating qualities predominate over its medical ones, and where the mode of its agency seems rather calculated to distress the patient, and to injure the health, than to remove the disease for which it is exhibited; hence, it were highly desirable to acquire a medicine equally potent as an antivenereal, and not possessing certain active properties peculiar to that mineral. But this concession forms no valid objection against mercury exclusively.

"There are other articles of the materia medica which produce ill effects on the animal system, even when administered with the utmost skill and judgment. It is sufficiently known that antimony, ipecacuanha, Peruvian bark, opium, digitalis, rhubarb, magnesia, honey, etc., when brought into conflict with certain idiosyncrasies, will excite great and serious mischief; the primary and direct effect of these medicines, on one or more parts of the animal system, militating absolutely against their medicinal qualities. But exceptions of this kind make no impressions upon the minds of considerate men, unfavourable to the generally acknowledged merits of these drugs; they note the particular instances, and substitute other medicines in their stead, which possess qualities corresponding to the indication.

"The wish which I have expressed, that another medicine could be found on which reliance could be placed for the cure of lues venerea, does in no wise spring from any distrust of the sufficiency of mercury; it originates merely from the same source which would induce me to desire that the means of remedying every form of human misery were abundantly multiplied."

Mr. Pearson adds—"I regard every effort used to increase the store of useful medicines as highly meritorious; and, notwithstanding my firm persuasion of the safety, efficacy, and pre-eminency of mercury, in all cases truly venereal, yet I should be guilty of a very perverse and contracted mode of thinking, were I to oppose the introduction of another specific, or censure the experiments made to ascertain its intrinsic merits.

"What number of specific medicines may yet lie concealed among the arcana of nature, can form no proper subject of conjecture; but, that mercury is as indubitable a specific against lues venerea, as any one article of the materia medica is against any one malady is a fact too authentic to be disputed by any who have either employment or reputation to lose; and as for those who possess neither, their suffrages are not worth collecting."

Although we have, since Mr. Pearson wrote these remarks, now seventy-four years ago, had many new remedies introduced, and some of them of great efficacy in their way, yet I would still endorse his opinion that there is no remedy like mercury for the cure of syphilis. The iodide and bromide of potassium stand pre-eminent among the medicines introduced since Mr. Pearson's time, but their value consists, in my opinion, in removing symptoms, not in curing the disease. I am of course aware that after a person has once had syphilis an impression is left upon his system which is not effaced for years, and perhaps not at all, and what I therefore mean by a patient's being cured, is, that he shall have no further manifestations of the disease. That this condition is often obtained by a proper course of mercury I cannot doubt. I have now seen a large number of patients who have told me that since they underwent a mercurial course they had remained well, and many of these had not had any return of symptoms for between ten and twenty years. Out of Mr. Pearson's 20,000 cases, a considerable number probably were instances such as I shall have hereafter to describe of local disease, which, with time, would doubtless have got well under the use of guaiacum, sarsaparilla, mezereum, walnuts, opium, the Peruvian bark, the mineral acids, the muriate of barytes, or any other of the remedies at the time in use, or even under no treatment at all. But no one can doubt but that a large proportion of Mr. Pearson's cases were really syphilitic, and were cured by mercury in a way that they would not have been by any of the other remedies which in other cases he had tried so extensively. Mr. Pearson's wish that another medicine, equally potent as an anti-venereal, and not possessing certain active properties peculiar to mercury, might be found, has not then been realised—but much has been done in the same direction, not by finding a new remedy, but by administering an old one in a different way.

Mr. Pearson mentions that he had so far modified the treatment of syphilis by mercury that he did not consider it necessary to produce ulceration of the gums, and he was satisfied if the action produced a spitting of from half a pint to a pint a day. Coming more near to our own times, the general treatment was, perhaps, that described by the late Mr. Cutler, in the Report of the Committee appointed in 1864 to inquire into the treatment and prevention of venereal diseases in the army and navy. He says, "as soon as I find that the breath is affected, or the gums are affected, or that the skin is very much affected, or that diarrhœa is produced, I consider that the patients are quite under the influence of mercury."

Mr. Cutler is asked whether he had ever witnessed the treatment of constitutional disease without mercury? —and he says that when he came to London the late Mr. Rose was surgeon to St. George's Hospital, and was then also surgeon-major in the Guards, and he wrote his paper on the anti-mercurial treatment. He then stated that he had never given one grain of mercury to any patient in the Coldstream Regiment of Guards for two years. Mr. Cutler got a letter of introduction to Mr. Rose, in order to see his practice at the St. George's and St. James's Infirmary, and to his surprise he found that nine out of ten of the syphilitic patients were taking mercury. Mr. Cutler asked, "Have you returned to the mercurial treatment?" "To be sure I have," said Mr. Rose. "I only wanted to prove that the disease in the bones and the worst form of secondary symptoms were occasioned by repeated courses of mercury," which were then given in all cases, whether the patients were debilitated by consumption or any other cause. Mr. Rose further stated that even in the Guards he found one case out of every three followed by secondary symptoms with the non-mercurial plan of treatment, and that this did not occur once in ten times when mercury was administered.

The mercurial treatment, Mr. Rose also considered, cured patients in half the time required by the non-mercurial. I may add that, even with regard to those who were supposed to be cured without mercury, the evidence is not quite satisfactory, for I was informed directly by one who was in the secret, and who himself afterwards did some business in the same line, that a large number of the soldiers in the Guards, who were supposed to be undergoing the non-mercurial plan of treatment, were in the habit of resorting to a person living in Knightsbridge, who sold them quantities of medicine containing bichloride of mercury. But this was only a repetition of what had long before occurred. Mr. Pearson mentions that in the time of Morgagni mercury was interdicted by some of the most eminent physicians of Italy, and that strong prejudices existed against it as late as the middle of the eighteenth century.

"How far," Mr. Pearson observes, "reason, or fashion, or prejudice, was predominant in conducting such a determination, I presume not to decide: certain it is, that notwithstanding the puny clamours of ignorance, the crafty discourse of interested empiricism, and even the imperious voice of authority, mercury continues to this day the medicine commonly employed, and alone relied on, in all truly venereal cases; and although there are many who pretend to exclude it from their nostrums, yet their perfidious declarations are occasionally betrayed by the salivating qualities of that mineral, which, in defiance of every disguise and combination, will sometimes appear to the detection of the impostor." And Mr. Blomfield speaks of those in his own day who had a never-failing diet drink that cured the evil leprosy, lues, etc.; and yet it was found by the state of the patient's mouth or bowels that by accident a little of the corrosive sublimate had slipped in unknown to the preparer.

Mr. Cutler's assertion, and the teaching of those who held the same opinion, that when the patient's breath became affected the patient was sufficiently under the influence of mercury, has led to a very widespread and mischievous error. It was assumed, and is still thought, by a large number of practitioners, that the mercury should be then discontinued. Nothing is more common in the history of a case than the statement that the patient's gums were touched, and the mercury discontinued. Such, certainly, was not Mr. Cutler's practice. What he meant was that the mercurial action should not exceed that which he mentions, and his practice was to continue that action for a considerable period. It is true that when the internal administration of mercury affects the bowels to any great degree, or produces much salivation, that mode of administering mercury has to be given up; but all who have had much experience in the treatment of syphilis, know that the disease is not cured in this way. The observations of Sir Benjamin Brodie are here quite in point. He says—"That, except in the slighter forms of the disease, we really cannot depend upon the internal administration of mercury for a cure. We may in this way patch up the disease, but it will return over and over again." One reason of this is obvious:—namely, that the mercury, in a very great majority of cases irritates the bowels, so that it has to be left off before the patient is cured, and on a recurrence of the symptoms, the patient perhaps is, on the whole, in a worse condition as far as his constitution is concerned, and certainly in a less favourable state for proper treatment than he was before. Sir B. Brodie, following Mr. Pearson, gives the decided preference to the inunction of the mercurial ointment, to all other plans of treatment in use in his time.

He says—"When the symptoms are not of a mild character, the patient should, if possible, be confined to the house, except perhaps for an hour or two in a fine day. The going out into the fresh air (as Mr. Pearson observed long ago) will counteract the influence of mercury. You never can be responsible for thoroughly eradicating the disease where the patient is at all exposed to cold or wet, nor where he does not lead a most regular and careful life in all respects.

"In all cases of syphilis in which you employ mercury, remember that you have two objects in view: the first, to cure the present symptoms; the second, to prevent a return of the disease. It seems to me that a great number of practitioners at the present day regard only the first object, and lose sight of the second. I have frequently seen a person who has taken mercury for a chancre, which has, perhaps, healed in a fortnight, and then has left it off, although a very hard cicatrix has been left. Under such circumstances, in nineteen cases out of twenty, there will be secondary symptoms. If mercury be taken for the primary symptoms, the patient should never leave it off till the hard cicatrix has disappeared; nor, indeed, for some time afterwards; and so, where it is given for secondary symptoms, it should be continued for a considerable time after they have disappeared. A man has an eruption of the body; it fades away, under the use of mercury, in the course of a month; but the remedy must be used as a prophylactic for another month. If a patient be confined to his house, or only allowed to go out a little in a fine day; if he be made properly to rub in the ointment, and the course be carefully watched and continued for some time after the symptoms have subsided, you will, I am satisfied, in the great majority of cases, make a real and permanent cure of the disease. I suspect that this is not the way in which it is administered by the majority of practitioners at the present time, but it was so administered formerly. You must not suppose that we have advanced alike in all departments of surgery; indeed, I am sure that in some things we have gone back, and I believe this to be one of them. I am much mistaken if the mercurial treatment of syphilis, as employed by the late Mr. Pearson during the greater part of his life, was not as nearly perfect as possible. At any rate, it was much more successful than the less careful treatment of modern practitioners. That gentleman was surgeon to the Lock Hospital; and having no general hospital to attend to, the powers of his mind were more especially devoted to the study of syphilitic diseases, and their treatment; and the practice which I have now recommended was that which he usually adopted. When I was young in my profession, I had frequent opportunities of meeting him in private practice, and of learning how profound a knowledge of the subject he possessed; and I may take this opportunity of recommending for your perusal his treatise on the various articles of the materia medica recommended for the cure of syphilis, in which he offers many excellent observations on the use of mercury, and enters into details in a way in which it is not my object to enter into them at present."

The preparations of mercury generally used were the blue pill, the mercurial ointment, calomel, corrosive sublimate, and the iodides and bromides of mercury. For fumigation, the grey oxide and the bisulphuret.

On account of its convenience, and the little trouble it gives, the administration of mercury in the form of pills is that which the patient prefers. But mercury can seldom if ever be given in this way long enough to cure the disease. It acts upon the patient's stomach and intestines before it has accomplished its object, and it then has to be discontinued. It may for a time, however, be usefully employed either by itself or in combination with external treatment. Three grains of blue pill, with half a grain of opium, night and morning, or half a grain or a grain of the iodide of mercury, with a quarter of a grain of opium, night and morning, are convenient modes of giving mercury internally, and will in general soon produce its specific action. The corrosive sublimate or perchloride of mercury, can never be trusted to for the cure of syphilis, although it is a valuable auxiliary in some stages of the disease.

The inunction of the mercurial ointment is the plan of treatment recommended by Mr. Pearson and Sir B. Brodie. This answers very well if a patient will carry it out, but it is not often in private practice that this can be accomplished. It involves a considerable amount of trouble, and the patients object to the dirty appearance on their skin and on their clothes. This last objection has of late been partially removed by the introduction of the oleate of mercury. In some patients the skin does not bear the inunction of mercury well. A crop of pustules not unfrequently appears, and this sometimes gives the patient a considerable amount of annoyance. Mr. Pearson was in the habit of commencing by the inunction of half a drachm of strong mercurial ointment every night, and he was very particular during the treatment not to allow the patient to be exposed to the influence of cold air. He kept them to their room, and sometimes to their bed. The advantage of this plan he found to be that the stomach and bowels did not often suffer from the action of mercury as a metallic salt; a larger quantity of mercury could be administered; the specific powers of mercury could be obtained with great certainty, and sometimes advantage might be derived from the friction being employed near the seat of the disease. The inconvenience of the pustular eruption he found might be avoided by previously shaving off the hairs. All acids during a mercurial course were forbidden, and even tea, if it became acid on the stomach. No vegetables, except potatoes, were to be eaten, and occasional aperients were administered, as it was found that a common effect of the plan of treatment was to induce constipation. Mr. Pearson was in the habit of increasing the quantity of mercury used to ʒj, or ʒij, or even half an ounce. The salutary or specific, and injurious effects, he thus sums up :—

I. It may prove fatal by acting as a metallic salt, in which case it produces vomiting, fainting, diarrhœa, and dysentery. Where such symptoms arise, even if unattended with danger to life, the treatment will fail in its specific operation.

II. It may act as a mineral poison, not by its direct action upon the stomach, but by producing erethismus, inflammation of the joints, effusion into the bursæ, ill-conditioned ulcers, mortification of parts, and great debility. In all these cases the mercury acts as a mineral poison, affecting very much the mind and the constitution in general, and not producing its beneficial effects on syphilis.

III. Mercury often acts beneficially by promoting perspiration.

IV. It promotes the urinous secretion, frequently rendering it turbid and offensive, and liable to deposit a white sediment.

V. It often produces inflammation of the glandular surface of the mouth, swelling of the tongue, and sponginess of the gums.

VI. It promotes increased secretion of saliva, producing ptyalism.

VII. It sometimes induces powerful depression of the animal functions.

The increased secretion from the skin, kidneys, and salivary glands, with depression of the animal spirits, were considered consistent with its operation as an antidote.

Mr. Pearson was of opinion that the gums should always be made tender and spongy, but this was only to be considered as an evidence of the action of the remedy, and as constituting no essential parts of the process of cure. The plan of treatment was continued, if possible, until the symptoms had disappeared, and for some time afterwards, and this might occupy from seven to nine weeks.

I have been particular in giving an account of the action of mercury in Mr. Pearson's day, as, under the milder treatment now pursued, some of these results are seldom seen and little known. But another evil has crept in, namely, that patients who have been supposed to have undergone a mercurial course have done so very inefficiently, the gums have perhaps been "touched," the mercury has then been discontinued, and the disease has remained.

Since Mr. Pearson and Sir B. Brodie's time another plan of administering mercury has been very extensively adopted here, on the continent, in India, but especially in America. Mr. Langston Parker's most valuable and energetic labours on the subject of mercurial fumigation suggested to me the ideas which I have endeavoured in some measure to work out; and as I find that the plan which I have advocated, although it has now come into very general use, is quite as imperfectly carried out in general practice as the administration of mercury in any other way, I am anxious to give a short but clear account of it. Abernethy long ago used calomel fumigation for the cure of syphilis, and probably, on account of the irritation which it produced when inhaled in excess, he appears to have abandoned its use. When calomel is volatilised a certain amount of free hydrochloric acid is given off, as may be indicated by placing a piece of moist litmus paper in the fumes. In like manner the bisulphuret of mercury yields sulphurous acid, which is very much more irritating to the lungs. The so-called grey oxide of mercury often contains a proportion of calomel, and itself is liable to be decomposed in sublimation. Sometimes crude mercury is produced, sometimes the binoxide, so that its effects cannot be relied upon. These are the preparations of mercury which have been most extensively used for mercurial fumigation, and of these the calomel is much less liable to decomposition, and produces much less irritation than the others. Experimentally, I found that the admixture of a small quantity of the vapour of water in a very great degree prevented the irritating effects of the sublimed calomel; and this is effected, as I suppose, by the admixture of the vapour of the water with the vapour of the hydrochloric acid. The irritating qualities of the vapour of calomel may be still further diminished by its being resublimed two or three times before it is used. In this action, as I conceive, any free hydrochloric acid is driven off. These seem very simple processes, but it is extraordinary the number of experiments that were tried, and the number of years that have elapsed since Abernethy's time before they were practically applied. They have, however, converted that which was before an uncertain remedy, often attended with considerable inconvenience, into a mode of treatment at once safe and definite in its action, and one which may be regulated with the greatest nicety. Any remedy, as Sir B. Brodie has observed, that is powerful enough to do much good, may also do harm if misapplied, and I am anxious to guard against some of the sources of error which are very common at the present time in the use of the calomel vapour bath.

I would not for a moment have it inferred that I take for granted that the plan which I have advocated for mercurial fumigation will ultimately turn out to be the best possible. It is, however, but fair and reasonable that those who wish to try it should do so according to the plan recommended, before they pronounce an opinion as to its efficacy. In the first place, it is the calomel bath which I have recommended in the treatment of syphilis, and not a vapour bath. The water used is only for the purpose of softening and diluting any irritating vapour that may arise when the calomel is sublimed; and for this purpose half an ounce, or an ounce, is quite sufficient. I find that it is very common for a considerable quantity of water to be used; as this boils a certain amount of heat necessarily becomes latent, and as the vapour recondenses on the skin, this latent heat is again given out. The result is often a profuse perspiration. A double evil results from this; the perspiration washes the calomel off the skin where it should remain; and it, to a certain extent, debilitates the patient. Now, many patients suffering from syphilis are already much reduced with regard to their physical powers, and will not bear any remedies of a depressing nature. A daily vapour bath becomes a tax upon the constitutions of such patients, which is a very serious addition to the causes of debility under which they already labour.

In the evidence before the commission, to which I have referred, Mr. Cutler states that at St. George's

Hospital he had tried the plan of treating syphilis by mercurial vapour baths, and found that patients were "knocked over" as soon by that mode of treatment as by the administration of mercury in other ways. It is not, however, stated what preparation of mercury was used. When I became surgeon to St. George's Hospital I took some pains to ascertain how the baths were given, and it was much the same in all cases. The patient was made to perspire profusely, and was afterwards rubbed dry. He was directed to put his head occasionally into the box in which he was placed, so as to breathe the fumes of the remedy. In the different institutions in London and elsewhere, where medicated baths are given, this plan was, and is still, very generally adopted. With regard to it three points are to be noted:—1. The mercurial powder deposited on the skin, which, if it is to do any good at all, must there produce its effect, is immediately wiped off, and in so far its action is prevented. 2. The patient breathes the vapour in a concentrated form, and sometimes this produces inconvenient symptoms. 3. The perspiration not only weakens the patient, but itself is a means of removing the medicine from the surface of the skin. Each of these points is of importance, and applies to mercurial fumigations of all kinds. A patient in St. George's Hospital had a secondary syphilitic ulceration, which threatened to destroy one side of his nose. He was ordered a calomel vapour bath daily. He was thin and emaciated, and complained of increasing weakness during his treatment. I found that he was using a water vapour bath, as well as a calomel bath, and to this I attributed in some degree his increasing debility. He was directed to use his bath with very little water. A change for the better was immediately perceived, and the ulceration was very soon permanently healed. The fact of the debilitating effects of a daily steam bath I have now witnessed in a great number of instances, far too numerous to require any further particular illustration; and, in order that as few mistakes as possible may in future be made in this respect, I have had an apparatus constructed by Mr. Blaise which will hold an ounce of water only.

The inhalation of the vapour of mercurial preparations also requires attention. For want of this all the preparations which have at different times been used have in turn lost their reputation.

Dry mercurial preparations, as I have convinced myself by a number of experiments, irritate the lungs, and cannot be continued with impunity. In an institution in London with which I am not unacquainted, it was long the practice to give the mercurial baths in a room without a fire. The patient was undressed and covered by a Mackintosh cloak, and not unfrequently had a kind of shivering fit before he began his bath. The skin, under such circumstances, would certainly not be left in a good state for the action of the remedy.

I knew a case in which a patient was ordered a calomel bath for the whole body. The quantity to be used was half a drachm, and the ordinary calomel was used. By mistake he only inhaled the vapour, instead of having a bath for the whole body. A considerable degree of irritation of the lungs followed, with general disturbance of the constitution. I saw this patient at the expiration of four years, and he then, as I believe with more or less justice, attributed a chronic affection of his lungs to the mistake which had been made. It is true that the patient was of a strumous habit, and had before been treated with cod-liver oil; but it is equally true, in my opinion, that the irritation artificially produced tended to localise and develope his disease. In another case, in which a large quantity of the vapour of ordinary dry calomel vapour was ordered to be inhaled, in the same thoughtless and mischievous way, the patient's constitution was very much interfered with, and the skin of the face remained livid for some hours afterwards.

The third point which has been noticed, namely, that of wiping the mercurial powder off the skin immediately after it has been applied, is so much a matter of common sense, that in itself it requires no illustration. But, it may be asked, what proof is there that mercury is absorbed in this way? The answer to this is, that with regard to mercury, as with other medicines, we judge by the effects produced. There is probably no medicine which, when once taken into a patient's system, can be reproduced in the same state as that in which it was administered. There are few that can be reproduced in any state of combination. When mercury is given by the mouth or by inunction, it would be very difficult to prove its existence afterwards in the blood, but that it does affect the living actions of the blood we know by the results that are obtained. It is the same with regard to calomel applied to the surface of the skin, although its effects differ very materially in different individuals. A medical man of my acquaintance had brought his skin, by the constant use of baths of various kinds, into very fine condition. He found that he could never take a calomel bath two days together without the effects being visible on the gums. In trying this experiment he was as careful as possible not to inhale any of the vapour. There was nothing peculiar in this gentleman's constitution, as far as could be ascertained, with regard to mercury taken internally.

As an extreme example in the opposite direction, I may mention the case of a patient who came to me one morning, and said, "I have been going on as you directed." I replied that I was very sorry, but that I did not recollect him. "Oh! I don't wonder at that," he said, "it is two years and a half since I saw you." It turned out that he had been taking the calomel bath every night, sometimes for two and sometimes for three months at a time, and altogether he had taken about 900 baths. He was looking the picture of health, had nothing to complain of, and had long ago lost all the symptoms for which he originally came.

The plan which I have usually adopted then is as follows:—A lamp, in which the methylated spirits of wine is burned, is put into a case, made principally of wire-gauze, on the principle of the Davy safety-lamp. The top of the case is fitted with a central, moveable, small circular plate, surrounded by a trough, which should contain one ounce of water only. The water should be boiling when first put in, or should be allowed to remain over the lighted lamp until it begins to boil. Thirty grains of resublimed calomel are then spread out on the central small circular plate.

This should be quite dry. The patient then sits, without his clothes, on a small stool or chair, and the lamp is placed between his legs. A cloak made of moleskin or some thick material is then made to cover the whole apparatus, and is tied round the patient's neck. It is important that the cloak should go quite down to the ground all the way round. As the water boils a certain quantity of steam is enclosed within the cloak; and, a little later, the vapour of the calomel as it rises passes through the steam and becomes mixed with it. The water first disappears, and the calomel is sublimed in from ten to fifteen minutes. The patient then gets into bed with the cloak on, so as to make it his night-dress. In this way the calomel is necessarily kept on the surface of the skin. The cloak used is furnished with a cane hoop, so as to be kept away from the skin during the action of the bath, and this hoop may be removed as soon as the bath is over, and replaced again before the bath is used the next night. The cloak has a slit in front, which the patient is generally directed to open for about an inch, so as to allow some of the vapour to escape. This rises in front of his mouth and nose, and he is directed to inhale it for a minute, at the expiration of each five during the continuance of the bath, so as to breathe the vapour for about three minutes altogether. The patient during this time keeps his head up, so that the moistened calomel vapour passes for about six inches through the common air before it is inhaled. This inhalation is not always necessary, but it furnishes a means of regulating with the greatest nicety the action of the mercury, as indicated by its effects upon the gums. I have never found mercury administered in this way produce salivation where patients had not also taken it in some other form. The action is upon the surface of the body, and the internal parts are comparatively unaffected. No diarrhœa is produced except from some accidental cause. The stomach and intestines are not irritated, and are free for the use of food or medicine. The perspiration produced amounts only to a slight moisture on the skin, and when this is the case the patient very rarely experiences any debilitating effects from the continued use of the bath. During this treatment I generally recommend patients to abstain from taking vegetable acids; and for this purpose, as a rule, they are told not to eat raw vegetables or raw fruits, such as salads, cucumbers, celery, apples, pears, and oranges. As the object is to have the calomel in contact with the skin, the patient washes only as much as may be necessary. Boerhaave long ago made the observation, that if patients went about their usual occupation, and followed their usual pleasures, he could not cure them; and Pearson, as has been stated, found that, under any plan of treatment, if the patients were much exposed to cold air the effect of his remedies was materially interfered with. This will be the case with regard to any plan of treatment by which there is a fair prospect of really curing the disease. I know how often it has been asserted that the disease is not cured; but a long experience now enables me to say very positively, as I have before remarked, that numbers of patients, after having gone through a proper course of treatment, pass five, ten, fifteen, or twenty years, without any fresh manifestations. They believe themselves to be cured, and whatever impression may be left upon their constitutions, no inconvenience subsequently arises either to themselves or their families. In this sense, then, syphilis may be cured, as well as any other recurrent fever to which the human body is liable.

But to effect this, as I have intimated, with any degree of certainty, the action of the medicine should not be interfered with by a diet that is likely to produce diarrhœa, or by exposure to fresh air or cold water. Fresh air has long been known as the antidote to mercurial action, and dabbling in water, either hot or cold, not only washes the calomel off the skin, but its evaporation chills the surface of the body, and certainly, according to my experience, prevents the full action of the bath as I have described it.

If a patient wants a wash, he may have two or three times a week, a warm bath, and remain under the water as long as he pleases. There is then no evaporation from his skin, and he should dry himself as quickly as may be when his warm bath is finished. These are matters of minute detail, but upon their observance, or otherwise, the success of the treatment of many a case will depend. During the first period of treatment I generally recommend a patient not to be in the open air more than an hour a day, and to select the best part of the day for the purpose, but I seldom object to his going about any ordinary in-door occupation. When the mercurial action is once established, and towards the end of the course, a greater degree of liberty may be allowed. The effect produced is usually a slight feeling in the gums, some increase of saliva, and a kind of metallic taste in the mouth. The gums sometimes become red and swollen, and some pain is experienced in biting a hard crust. All the beneficial effects of mercurial treatment may be obtained by the amount of action indicated by these symptoms, and I seldom, if ever, produce more. The time required for a mercurial course is a question of much interest and importance. This will necessarily vary, according to the nature of the case. We have before seen that the manifestations of syphilis vary very much at its different periods, and that the disease is modified in a very important degree when it recurs. Under these varying conditions the mercurial treatment must be varied also, but there is no phase of syphilitic disease, in my opinion, to which it is not applicable.

By the use of the calomel vapour bath as I have described it, the evils resulting from the internal use of mercury, and the inconveniences attending inunction, may both be avoided. The remedy may be continued every night, as long as necessary, without danger of depressing the powers of the patient's constitution, without salivation, and without disturbance of the digestive organs. The remedy is applied directly to the parts where the disease, in its primary or secondary forms, usually manifests itself. The slight action maintained on the skin prevents any great determination of blood to other parts, and is in itself beneficial. The plan involves a certain amount of trouble, and the same care with regard to exposure to air and moisture, as other modes of treatment do, but it has not their injurious consequences. The whole surface of the skin of the body, and generally the mucous membrane of the nose and mouth, are used for the action of the remedy, and consequently there is no irritation of any one particular part. The action of the skin also in some measure prevents any undue effects of the remedy on the gums, as may also be observed in the administration of the Plummer's pill. This remedy very rarely produces much effect upon the mouth, as the antimony which it contains determines its action rather to the surface of the body.

In the forms of the disease affecting the skin, and characterised by the adhesive inflammation, whether primary or secondary, patients will bear well any form of mercurial treatment, at least for a time. If we have syphilis alone to deal with, at whatever period after infection, the disease is one, and the treatment the same. If the patient is of a strumous constitution; if he has previously been debilitated by prolonged, irregular, or injudicious courses of mercury; if he has suffered from ague, or some other form of fever; or if he has had disease of the liver, spleen, or some other internal organ, then mercury, whether in what have been called the primary or secondary forms of syphilis, must be administered with caution.

Mr. Pearson found that rather a shorter course of mercury was required for primary syphilis than for secondary. I have found, on the other hand, that a longer course is required for primary than for secondary disease. It is probable that as the diagnosis between real syphilis and local forms of the venereal disease were not made with the same accuracy in Mr. Pearson's time as at present, that some cases that were not really syphilitic were included among those who were treated with mercury. These would for the most part get well rapidly, and would reduce the average time during which the treatment was continued. It would, however, be a great mistake to suppose, although no accurate account was then published with regard to affections which would, and those which would not, be followed by constitutional disease, that therefore the older surgeons had not the practical tact of at least distinguishing some of these.

The late Mr. Walker recognised what he called the gonorrhœal sore, and which, to my eye, and as far as my memory serves me, corresponded to what I have described as the local suppurating sore. It is true that many surgeons subsequently, and even in the present day, profess not to be able to distinguish an infecting from a non-infecting sore. Thus Mr. Cutler, in the evidence before the commission previously referred to, says:—"My opinion is that no one can tell from the appearance of the sore, without the history of it, whether it is infectious or not; that is to say, take what is defined to be the Hunterian chancre, my belief is, that in the case of any sore on the penis, if you irritate it, you may convert it into a sore having all the appearances of the confirmed Hunterian chancre; and so strongly do I feel upon that, that at the present time I never determine, in considering the treatment, to administer mercury until I have heard clearly the history of the case."

Now, in spite of the difficulty which formerly existed, and still exists, with some surgeons, of distinguishing an infecting from a non-infecting sore, I am firmly of opinion that the older surgeons did not give mercury in the indiscriminate way that has been supposed; but still that they did give it in some cases where it was not necessary, and that the average period during which it should be continued for primary syphilis was therefore made to appear much shorter than at present. Another point which was not formerly accurately considered, has tended to the same result,—there is seldom a distinction drawn in the writings of the older surgeons between a disease treated for the first time and one which had recurred in a modified form. The latter would be very much more easily dealt with, and require a much shorter period of treatment.

For primary syphilis occurring in a patient for the first time, uninfluenced by the existence of previous disease in himself, or by hereditary influences of the same kind, I seldom now discontinue the treatment under three months, and I generally explain to the patient to begin with, that unless he is prepared to follow such a course he had better wait until the secondary symptoms appear, and then undergo his treatment. It is often difficult to persuade a patient who has a slight induration, accompanied by the existence of amygdaloid glands, that his affection is of a nature to require such a course. He will probably ask some friend before he consents, and not unfrequently it has happened in my experience that he has been told that it is "nothing," and has waited until he has become practically convinced of the truth of the diagnosis. This occurred in the celebrated case of the late Mr. Wyndham, which I need not mind alluding to, as the facts were published over and over again in the daily papers. I told him that he not only had the disease, but that he might communicate it. He replied, "Well! I am told it is not so." I did my best to persuade him, but in vain, and, as was soon after given in evidence, he infected his wife. When a patient consents to undergo a proper course of treatment, I generally make him take a calomel bath in the way I have described every night.

Some slight evidence of mercurial action generally appears on the gums within the first week, and this is steadily maintained either by the calomel bath alone, or by the addition of some other medicine. After this action has been kept up for seven or eight weeks, the patient is allowed more liberty, but the mercurial action is never allowed entirely to subside, and no break in the treatment is permitted. If the action of the mercury once entirely goes off, it is exceedingly difficult to establish it again in a satisfactory manner. Should this be attempted by increasing the quantity of mercury, the action reproduced will probably not be of the same satisfactory kind. The gums, instead of becoming slightly spongy and soft, will perhaps ulcerate, and there will be some general disturbance of the patient's system. In the treatment of a primary affection, all induration at the site of the original disease should disappear, and, if possible, the amygdaloid condition of the glands. This last, however, is an effect which it is sometimes exceedingly difficult to produce, and some enlargement of the inguinal glands will occasionally remain, in spite of any treatment, for some years, but often without any other manifestation of the disease.

In all secondary forms of skin disease characterised by the adhesive form of inflammation, the same mode of treatment may be pursued, in combination perhaps with some other medicines, of which I shall have to speak.

When a patient's constitution has been weakened from any cause, especially from a continuance of the disease, the eruptions on the skin will change their character. Different forms of eruption may be observed in the same patient at different times. An eruption which is at first papular, and which terminates then by desquamation, at a later stage will be papular or tubercular, and each papule or tubercle will present a white spot of lymph on its apex, which becomes converted into pus. A great many modifications may now occur. In some cases the papules or tubercles, either separate or in groups, remain in a chronic indolent stage, presenting little change from day to day; in others, the action on the skin and elsewhere passes rapidly into suppuration, ulceration, or even mortification. These different results have been distinguished by different names, which are convenient for the purpose of description, but which, in my opinion, would lead to error if made use of so as to imply that these different accidental results constituted so many different diseases. But, nevertheless each phase, in the development of a syphilitic disease, may require a modification of treatment. This will be more fully considered in the next Lecture.

LECTURE V.

TREATMENT OF PARTICULAR AND MODIFIED SYPHILITIC AFFECTIONS.

In the previous Lecture we considered the treatment of syphilis as it manifests itself in different forms of adhesive inflammation. In all these the newly formed matter remains more or less a part of the living being, and the actions which take place are therefore in some sense common to the whole body. The blood which circulates through an indurated chancre, an amygdaloid gland, a secondary pimple or tubercle, is the same as that which nourishes and imparts its living influences to every portion of the body. As far as we have gone we have seen the parts upon which the disease has fallen retaining their life for a certain time and then falling into premature decay, and being thrown off in various forms from the surface of the skin or mucous membrane, or being re-absorbed into the patient's system. We have now to consider the cases in which the parts whose life is touched soon cease to be a part of the living being, and also those usually included under the head of tertiary syphilis. The action nearest to the adhesive inflammation is that in which serum is effused from the vessels, and this Hunter calls the œdematous inflammation. It has, he says, very much the appearance of the adhesive, and probably comes nearest to it of any. It is always attended with weakness, whereas a greater degree of strength would have produced the adhesive inflammation under the same cause or irritation. This action may be strictly local and defined, as well as diffused or general.

It, in some degree, very frequently accompanies the first local manifestation of syphilis, and in its secondary manifestations gives rise to a variety of skin diseases, which have been classified under different heads, but which are essentially of the same nature.*

The treatment of these affections is similar to those characterised by the adhesive action, but inasmuch as they indicate a certain want of tone or power in the parts affected, some tonic form of treatment, general or local, is also advisable.

Hunter divided the manifestations of constitutional syphilis into those which usually occur during the first stage and those which occur during the second stage of the disease. This is, as I believe, a much better and more practical division than into secondary and tertiary symptoms. The skin, throat, or mouth are the parts first affected. The affection of the mouth is correctly distinguished from that of the throat. Occasionally, although rarely, an affection of the mouth, resembling salivation, will be one of the first manifestations of constitutional syphilis, even in those who have not taken any mercury, as will be illustrated in Case LVIII.

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* Thus we have *syphilitic herpes*, *syphilitic eczema*, the *varicelloid syphilitic eruption*, the *impetigenous syphilitic eczema*, etc. When the effusion beneath the cuticle is greater, bullæ are formed instead of vesicles, and then the disease is described as *syphilitic pemphigus*.

The eruptions on the skin present such an infinite variety that it would be in vain to attempt any description which would include them all. This probably depends upon the fact that syphilis may occur in every variety of constitution, and upon parts of the skin liable to be affected by a great variety of other diseases. I would say, generally, that there is no disease of the skin that may not be modified in its course and progress during the development of a syphilitic eruption. In uncomplicated and typical cases the diagnosis between syphilitic and other diseases is sufficiently easy, but in complicated cases this is not so.

The spots of scabies will, in a syphilitic patient, often assume a peculiar appearance. I have lately had under my care a case of ichthyosis of the skin of the hands, in which the disease became much aggravated during the development of syphilitic symptoms, and subsided as these were removed. In patients who have a constitutional tendency to eruption on the skin, it is often, especially in the later stages of the disease, extremely difficult to determine how far the affection may be considered syphilitic, and how far it may be supposed to depend upon other causes.

A mottled appearance of the skin, depending upon congestion of clusters of small papillæ, is generally the first symptom. This mottled appearance is increased by rubbing the skin. It will disappear in one part of the skin and reappear in another, or some of the spots will entirely fade away while others continue and increase with the disease.

These mottled spots often become converted into blotches, sometimes of a distinctive copper-colour. The colour probably depends upon the extravasation of some of the red particles of the blood. In some cases the amount of discolouration from this cause is very great. This model, one of a beautiful series from the Museum of the College of Surgeons, represents the right leg in a state of venous congestion, with large, flat, syphilitic papulæ and tubercles congested with venous blood, purple in colour, and presenting a turgid appearance. Near the lower part of the model are four papulæ, ranging in size between one line and four, while in front of the tibia one of these flat tubercles is upwards of an inch in diameter; and towards the calf is a circular tumid tubercle nearly an inch and a half in breadth, and nodulated on the surface by six minor tubercles. The tubercles bear evidence of having undergone desquamation, as seen by the narrow edge of loosened cuticle which surrounds their base; and two of the tubercles situated in front of the tibia have vesicated and burst, exposing to view a deep-red pulpy surface, partly encrusted with dried blood around its circumference. In some cases the discolouration remains long after all other syphilitic symptoms have disappeared, and is little affected by any mode of treatment. These blotches generally become covered by very thin scales, resembling small fragments of silver paper, and this gives them some appearance of transparency. The thin cuticle in time peals off, and is followed by thicker formations, called by Hunter a succession of scurfs. Every succeeding scurf becomes thicker and thicker, until at last it becomes a common scab. This process may terminate in exfoliation, ulceration, or suppuration, according to circumstances. Where the cuticle is thick, as on the palms of the hands and soles of the feet, it will separate in patches and a new cuticle will form. This action may be repeated an indefinite number of times without any scabs forming, and without ulceration or suppuration. On the other hand, where the skin is thin and opposed to another similar surface, the secretion is soon removed, and instead of scurfs or scabs, "we have the skin elevated, or, as it were, tumified, by the extravasated lymph, into a white, soft, moist, flat surface." This constitutes the mucous tubercle so often seen between the nates, about the anus, between the scrotum and thighs, in the angle between the two thighs, upon the prolabium of the mouth, or in the armpits.

Another very common and distinctive form of venereal eruption consists of a number of small acuminated pimples. These are sometimes evenly scattered over the body, and sometimes clustered in groups. In the admirable collection of drawings and models catalogued and presented to the college by Professor Wilson, we have some excellent illustrations of syphilitic diseases of the skin.

In No. 145 there is a water-colour study of the forms of manifestation of syphilis of the skin, ranging between syphilitic erythema and papular syphilis. The groups represented are all taken from nature, the upper half of the drawing being devoted to erythema and the lower half to syphilitic papulæ or lichen. The forms of erythema shown in the drawing are the corymbous, orbicular, circinate, and squamous, with the deep brown stains common to syphilis; while the forms of papular syphilis are the disseminated, corymbose, and circinate. The colour of the eruptions has been closely adhered to, and the orbicular spot, denuded of epidermis and surrounded by a ragged frill of cuticle, may be taken as a precise imitation of the pathognomonic "copper-colour."

No. 146 is a coloured lithograph of erythematous syphilis in an infant eleven months old. The disease was first manifested at the age of six weeks by excoriation of the mucous membrane of the mouth, and at the angles of the mouth, nose, and eyelids; by aphthæ, hoarseness, and mucous accumulation in the bronchial tubes, trachea, and nares. Three months after this attack the eruption made its appearance in the form of small circular spots, which increased quickly in size, and became blended into blotches of considerable dimensions, slightly elevated, distinctly circumscribed, and gently rounded at the margin. A few of the original spots remained isolated and formed circular disks, somewhat depressed in the centre; an example of one of these latter spots is seen on the left buttock. The mother of the child was free from any syphilitic symptoms, but had suffered two miscarriages, and occasionally from vaginal discharge and sore throat, the latter being attributed to catarrh. She was a healthy-looking young woman of twenty-six, and her husband was, to all appearance, equally healthy. One of the series of "Portraits of Diseases of the Skin."

No. 147. Water-colour drawing of the same case; the prominent margin of the patches is more strongly marked than in the lithograph, particularly that of the patch occupying the right flank.

These lichenous eruptions depend in their origin upon the adhesive form of inflammation. They may desquamate and dry up, or a small quantity of opaque serum or white lymph may form under the cuticle, or the apex of each pimple will suppurate. Successive crops of eruption may be developed, all running the same course, so that we may have the same disease at different stages represented by pimples and pustules in different stages of development. When suppuration occurs, the pus is secreted from the surface of the cutis. It is generally unattended by ulceration, and leaves no subsequent evidence of any loss of substance. In other cases some papules will enlarge and become developed into tubercles, and these may coexist with the former, so that they can hardly be considered as distinct forms of disease.

No. 156 is a coloured lithograph of the abdomen, showing a dull-red eruption resembling roseola or measles.

No. 157 is a water-coloured drawing of the same case.

In Nos. 171 to 176 inclusive, are represented different forms of papular eruptions. In the last the forms presented by the eruption are of three kinds, namely, isolated papulæ, papulæ clustered on an erythematous base, and large, flat, orbicular papulæ, which from their size belong to the class of tubercles. When tubercles are formed as a direct manifestation of syphilis, they probably have their origin in the sebacious glands, and do not commence with a pimple on the skin, as those which we have now considered.

They appear, in the first instance, as small hard substances, like peas, which may be felt before the skin is discoloured. The action here extends from within outward, and as this advances a small red elevation, evenly rounded on the surface, makes its appearance. The cuticle then dies and becomes detached, but may remain for a considerable time, forming a kind of shield to the newly-formed cuticle. The inflammation here is strictly of the adhesive kind; for although these tubercles appear sometimes to be semi-transparent, yet when the horny cap of the cuticle is removed, not a drop of fluid will be found.

In our collection, No. 188 is a plaster cast of the lower part of the face of a hospital nurse, showing a tubercular blotch of chronic syphilis on the chin, and two similar tubercles on the edge of the lower lip.

No. 189 is a wax cast of part of the face of a woman, aged 42, showing a thickened and nodulated patch of chronic dermatosyphilis, involving the nose and neighbouring part of the cheek; the border of the ala nasi is notched by ulceration.

No. 190 is a plaster cast of the same case.

No. 191 is a wax cast of part of the face, showing deep cicatrices on the cheek and nose left by chronic tubercular syphilis, together with the remains of several tubercles on the nose. The eruption commenced in front of the right ear, and gradually travelled across the cheek. The patient had no other symptom of syphilis.

No. 192 is a plaster cast of the same; the deep cicatricial pits are more striking than in the wax cast.

No. 193 represents a face deeply pitted over the whole surface by chronic syphilitic tubercles; a cluster of these tubercles is seen on the left cheek, and a smaller cluster on the forehead.

These tubercles are very indolent in their progress, and the adhesive action will continue a long time, producing layer after layer of thickened and diseased cuticle. During this adhesive stage a persistent and long-continued course of mercurial treatment, according to my experience, is by far the most satisfactory, and the only one which can be relied upon.

After a time, and depending in a great measure upon the state of the constitution of the individual patient, the tubercle may ulcerate or suppurate. When it ulcerates the ulcer always commences in its central and most projecting part. This may be seen depressed below the surface of the surrounding raised and indurated tissue, and has been supposed to be, and probably is, the orifice of a sebacious duct. When tubercles ulcerate or suppurate they are not so beneficially influenced by mercury as during the adhesive stage. Other remedies have then to be sought, such as are used for other forms of suppurative or ulcerative secondary syphilitic affections.

Secondary syphilitic affections of the skin may suppurate from their commencement. The surface of the skin is here first affected. A slight blush first appears, and after a short time the cuticle is raised by a turbid serum, which soon becomes purulent. The cuticle then gives way, and a small ulcer is left, which, in vigorous constitutions, soon yields to treatment. But in cases where the constitution has been much debilitated from any cause, instead of well-formed pus a tenacious fluid may be found, which concretes into a scab. The first scab formed is no larger than the original pustule, and adheres to the surface. Some amount of ulceration then occurs, and the secreting surface is enlarged. Upon this a fresh scab forms in the same way, but longer than the first. A series of concentric layers may thus be formed, each of which adheres to that which was previously formed, and to the parts below, so that the diameter of the scab is enlarged, and at the same time it becomes more prominent, the base being always larger than the apex. This action gives us the various well-known appearances of rupia.

No. 230, in the museum, represents a remarkable and characteristic case of *rupia prominens.* The patient was a young man, aged twenty; he had been in a state of debility from accidental immersion in water in the month of January; and in the December following, while yet feeble, he became affected with chancre and bubo. The chancre healed quickly, but the bubo suppurated, and kept him in bed for nine weeks; and two weeks after taking to bed he had sore throat. Six weeks after contagion an eruption appeared on his face, chiefly on the side exposed to the draught from a window, the eruption consisting of large and but slightly prominent pimples, which became pustular at the summit in the course of a few days, and shortly afterwards dried into crusts. In March he had a second and more severe attack of sore throat, with pains in his limbs, and at this time, namely three months after contagion, the eruption presented the appearance seen in the plate. On the forehead and eyebrows there were no less than seventeen crusts, of which fourteen occupied the left side; on the nose there were nine, on the rest of the face twenty-seven, and fifteen on the scalp, making a total for the head of sixty-eight. There were but few on the rest of the body, none on the front of the trunk, two small ones on the back, one of considerable size on the left upper-arm, six on the left leg, but none on the limbs of the right side. The elevation of some of the crusts was three-quarters of an inch, while the largest of the crusts, one situated on the thigh, measured two inches in diameter. One of the series of "Portraits of Diseases of the Skin."

No. 231 is a study in pencil and water-colour of the same case. The figure in pencil under the principal drawing represents the form of the large flat crust, two inches in diameter, which was situated on the thigh; while the water-colour drawing illustrates the progressive development of the pustule, and the formation of the two kinds of crust, namely, the flat wrinkled crust, which has been compared to an oyster-shell, and the conical limpet-shell crust.

No. 232. Plaster cast of the right cheek of the same patient, showing scattered pustules and progressive crusts, at the angle of the jaw a conical crust, and in front of the ear a crust thicker below than above, in consequence of the gravitation of the pus imprisoned by the enclosing pellicle of epidermis.

No. 233. Water-colour study of the conical crust of *rupia prominens*, and of an *ulcer* at the bend of the elbow, from which one of the flat crusts has been removed. The conical crust was projected from the eyebrow, and an inflamed and raw edge is seen at its base. The special peculiarities of the ulcer are its asthenic character, together with the paleness and thinness and somewhat livid condition of its edges, whilst exteriorly to the edge the skin is congested. The surface of the ulcer is uneven, free from pus, and exudes a serous fluid. The patient was a man twenty-nine years of age; he had suffered from a syphilitic sore, which soon healed, and without secondary sequelæ. Eighteen months later, a rupial pustule, followed by an ulcer, appeared on the front of the chest; soon after another rupial sore showed itself on his arm, and a few weeks subsequently the *rupia prominens*, exhibited in the drawing and casts, was developed on the eyebrow. He had been tormented with the rupial affection for six months, at the time of making the drawing.

No. 234 is a wax cast of the above case.

No. 235 is a plaster cast of the same case.

In cases of rupia, although mercury judiciously employed is often of the greatest benefit, yet other remedies have to be sought.

It may be stated generally that *suppurating syphilitic eruptions of the skin* require a decided modification of treatment. The mercurial action will here not be borne so well, and may with great advantage be combined with some tonic medicine administered internally, such as bark, nitric acid, iron, or sarsaparilla. The iodide or bromide of potassium may here also be used with much benefit. The same observations apply to primary syphilitic sores which suppurate from any constitutional cause. Mercury, in any form, cannot in either case be so freely used; but, inasmuch as it is the only remedy that offers a fair prospect of curing the disease, it should be administered in a form modified to suit the particular case. This circumstance had not escaped the acute observation of Sir E. Home. He says:—"When chancres are attended with a great degree of inflammation, and swelling of the neighbouring lymphatic glands, there are peculiarities in the constitution which are unfavourable to the use of mercury. It should therefore in such cases be used with caution, and joined with such remedies as will make it less irritating to the constitution."

A drawing in the possession of the college may possibly be intended to represent one of Sir E. Home's cases.

A similar mode of treatment may be requisite where patients, after an interval of some years, have a second attack of real syphilis. The primary sore may here suppurate, and the inguinal glands may not be at all affected, or, if affected, the induration will not present the same defined outline as in the first attack, and the action is much more liable to terminate in suppuration. The inflammation, however, is of a chronic character, and will continue until, and even after, a fresh development of secondary symptoms. The proportion of solid matter deposited in and around the glands is large, and the swelling softens in part only, and very slowly. Here the combined mercurial and tonic treatment is again very advantageous. This class of cases is one which I have nowhere found clearly described, and the real nature of which, I have reason to believe, may very often be mistaken in practice.

Ulceration of the skin is not an uncommon consequence of syphilis in debilitated constitutions, and it may extend over a very large surface. I have here a drawing in which the greater part of the skin of the thigh was affected, and which healed in a very short space of time under the influence of local and general mercurial fumigation. There are no cases in which the action of the mercurial vapour bath produces such an immediate and decided effect as in these. But it must be given in a modified form. Patients may soon get under the influence of mercury when it is applied to large ulcerating surfaces, and consequently a comparatively small quantity is required to produce the desired effect. If the ordinary quantity of calomel be used, the patient might be salivated to a very inconvenient degree. These extensive ulcerations may occur in young people, and during what have been called the secondary manifestations of syphilis; but, in the later or tertiary period, chronic ulcerations of the skin, to a limited extent, more frequently happen.

Case XLVIII.—Mr. Jonathan Hutchinson was good enough some time ago to ask a patient to see me who had an ulceration of one eyelid, which threatened to destroy it. He had taken a quantity of mercury internally, and had exhausted all the ordinary remedies. Under the use of the calomel bath the ulceration healed completely, and, I believe, permanently. The ulceration began to heal as soon as the patient became slightly affected by the mercury, and the beneficial influence here was, I believe, due to the constitutional, and not to the local, influence of the remedy.

In large ulcerations of the skin the local effect of the vapour of the calomel may have quite as much, or more, influence than its effect upon a patient's constitution.

CASE XLIX.—Not long ago a patient in St. George's Hospital had an ill-conditioned ulcer some five inches in length, extending from the heel up the outside of the leg. He had for some months been under treatment without benefit. He was directed to hold the ulcerated surface night and morning over the calomel lamp. Ten grains were sublimed on each occasion, without any water. In a fortnight the ulcer had healed.

CASE L.—A young woman was admitted with an honey-combed ulceration over the whole of the left leg. She had had sore throat, and an eruption over the body, and had still enlarged glands in various parts, and especially in the left armpit. She had been for a long time out-patient at one metropolitan hospital, and for three months in-patient at another, and without apparent benefit. She was ordered a pint of the simple decoction of sarsaparilla, made according to the London pharmacopœia, daily, and a general calomel bath every night. An improvement was at once manifest, and the leg was healed in two months. The glands in the axilla, however, still remained enlarged. There was no history of primary syphilis in this case.

CASE LI.—A married lady, who had been infected by her husband, but who, when I saw her, showed no other symptom of constitutional syphilis, had an ulceration of the lobe of one ear, which had in part destroyed it. The ulceration was surrounded by red, swollen, and shining skin. It had persisted, getting better and worse, for some years. She began the use of the calomel baths, and found herself so much better that she thought she might discontinue their use. Some months afterwards, however, the ulceration returned, and when I last saw her she expressed her determination to carry out the treatment. Had this not been successful, I have every reason to suppose that I should have seen her again.

It is probable that a great many intractible ulcers of the skin, to which it is impossible to attach any specific history, have in some way or other a syphilitic origin. All rupial sores may be included under the head of syphilitic ulceration of the skin. These, like other forms of syphilis, may, in my opinion, be best treated by mercurial vapour in a modified form, combined with tonics, sarsaparilla. and the iodide or bromide of potassium.

Case LII.—A young married woman, who came from Wales, had an ulceration of the skin of the left side of the nose, which had persisted for months. It presented all the appearances of rupia, and appeared likely to destroy the left ala. It, however, healed, without leaving any disfigurement, under the use of the general calomel bath and sarsaparilla.

It may be well, in such cases, sometimes to give the tonics first, and to wait until the patient has recruited his strength before giving the calomel bath; but I am able to state very positively, from the observation of a large number of cases, that the calomel bath, properly administered, is as useful in this as in the other forms of syphilis.

There is a form of ulceration of the skin of patients affected with secondary syphilis which does not depend upon the direct influence of the syphilitic poison, but which is extremely liable to be mistaken for those that do. The ulcerations now referred to generally occur where some portion of bone about the skull has become affected, and where, either by direct irritation or by reflex action, the nerves going from the brain, or spinal cord, are kept in a chronic and persistent state of morbid irritability.

Case LIII.—Mr. ——, a tradesman in the city, came under my observation on the 3d of March 1859. He gave no distinct history of any primary syphilitic affection, but a well-marked and accurately-defined induration existed at the upper part of the root of the penis.

Eight years previously an ulcer made its appearance on the forehead, immediately over the left eye. This spread rapidly in every direction; about the same time the skin over the right elbow began to ulcerate. This ulceration extended upwards and downwards, and involved the skin of the whole arm. The ulceration on the forehead healed, but that on the arm had never entirely done so. Three years after the commencement of this ulceration, he had a severe convulsive fit; he was not insensible, but there was violent contraction of the muscles of the jaw and back. During the continuance of the spasm no food could be administered. The muscles of the face were likewise affected.

In the year 1857 it became evident that the bones of the skull were extensively diseased. He was now one day suddenly seized with violent spasmodic contractions of the right side of the face, which lasted half-an-hour, without loss of consciousness. Four months later, a second attack followed, of a more severe character. This lasted six hours and a half, was accompanied by partial paralysis of the right side of the body, and tremor of the limbs. Subsequently to this several milder attacks occurred, and increased in frequency. He always had a warning of these attacks. His face became flushed, there was a difficulty of articulation, and tremor of the muscles on the right side of the face.

This patient underwent a great variety of treatment by different medical men, and was for a considerable period out-patient at St. Bartholomew's Hospital. On the 13th of September 1859 he was admitted into the Lock Hospital; an ulcer still at that time existed on the outer side of the right forearm. The cicatrised skin, from the shoulder to the wrist, firmly bound down the parts beneath, and the arm was in consequence very much reduced in size. There was no motion either in the elbow or wrist joints. The hand was greatly swollen and œdematous. The frontal and parietal bones were in several places denuded. Extensive portions of their outer tables were either carious or necrosed.

All ordinary remedies having been previously exhausted, this patient was placed under the influence of chloroform on the 25th of October, and the trephine applied in several places over the right parietal bone. In the part apparently the most diseased, the whole thickness of the skull was removed, to the extent of one crown of the trephine. In other places, the outer and middle tables only were taken away. The exposed dura-mater, where the whole thickness of the skull had been removed, bled freely, and did not appear to be covered by any deposit. The surface of bone which lay in contact with it was slightly eroded, and was also perforated by numerous very minute holes.

October 26. Had slept well during the night.

November 5. Had two fits last night similar to those he had had previous to his operation. They were reported by the house-surgeon as "of an epileptic character, accompanied by loss of voluntary power."

November 12. General health improved. Healthy granulations from the scalp. The ulcer on the arm showed a disposition to heal.

November 27. Had a slight fit, which lasted about a quarter of an hour. During this time he was quite conscious, but the lower jaw was fixed, and the muscles of the face were slightly convulsed. From this time, until he left the hospital on the 23d of December, there was no recurrence of the fits. The wounds in the scalp assumed a healthy aspect, although there were still some small portions of bone which remained uncovered. The wound in the arm became reduced to the size of a fourpenny piece, and ultimately healed.

After lapse of some years I heard that this patient had died, and I obtained permission to examine the body. The skull may be seen to have been very extensively diseased; but what is most remarkable in the case is the extent to which membranous reparation has taken place.

No. 240 in our collection is a water-colour study of *chronic ulcerative syphilis;* the disease occupies the side of the knee, and is partly cicatricial and partly ulcerative, the ulcers being coated over with thick black crusts, from beneath one of which is seen exuding a drop of sanguineous fluid. The cicatricial portion of the patch is depressed into shallow pits, corresponding with pre-existing ulcers, is extensively foveolated, and is discoloured by the deep red-brown or copper-colour characteristic of syphilis. The pigmented cicatrices of two healed ulcers are seen a little lower down the leg. The patient was a gentleman, twenty-nine years of age. At the age of twenty-three he had a hard chancre, which healed in a fortnight. Three months afterwards he suffered from general papular eruption of the corymbous type, and the eruption lingered for three months. One year later a flat tubercle appeared on the calf of the leg; it suppurated and ulcerated, and healed in two months. After an interval of a second year a similar tubercle, followed by an ulcer, showed itself on the calf of the opposite leg; this also lasted for two months; and a year and a half subsequently the existing disease commenced as a small tubercle, and had been creeping slowly onwards for twelve months. He never experienced any affection of the mucous membrane, bones, or nerves, as evinced by the absence of sore throat, nodes, and neuralgia.

No. 253 is a water-colour study of *chronic ulcerative dermatosyphilis* of the face. The patient was forty years of age, and had been suffering under this disease for many months; his nose was swollen and inflamed, the swelling and redness extending upwards to the eyes, and, on the right side, involving the inner canthus and superior lid, outwards upon the cheeks, and downwards to the middle of the upper lip. The mucous membrane was equally swollen, and caused a partial obstruction of the nostrils. Around the base of the nose was an extensive superficial ulceration, coated by a thick scab, and on the right cheek were several tuberculous risings, having the characteristic colour of syphilitic tubercles.

No. 254 represents the same case, on the nineteenth day of treatment, by a modification of the Zittmann method. The nose had recovered its natural dimensions, the ulceration was healed, the crusts were gone, and nothing remained of the disease but the discolouration, and a patch of small tubercles situated in the angle between the nose and left cheek, together with a small group of cicatrices on the right cheek.

Sloughing of the skin seldom takes place as a consequence of constitutional syphilis, unless the internal and middle coats of the arteries have first been affected, nor is sloughing from a primary infection often seen in the present day. In a large proportion of cases where the sloughing has been attributed to syphilis some other cause of local inflammation has probably existed, but in some cases the syphilitic poison must have been present, if it has not been the original cause of the action. A young woman, otherwise apparently in perfect health, was admitted into hospital, with a slough on each side as large as the palm of the hand, extending from back part of the vagina to the nates. The slough was deep, extending through skin and cellular tissue, and could not, as far as could be judged, have been caused by any external irritation applied only to the surface. Some poison or other must have penetrated the tissues. The action was perfectly circumscribed, and was followed by no constitutional symptoms. Some years ago a patient was admitted into King's College Hospital with mortification of the whole of the penis. The skin was of a lightish-blue colour, and not swollen. The whole organ was affected at once, and separated in front of the scrotum. Such cases, although generally attributed to syphilis, may depend upon some other cause. The point, however, of physiological interest here is, that where the syphilitic poison is present, as it must be in some cases, it is often destroyed, together with the tissues which contain it. As a rule, no secondary manifestations appear when mortification is the first symptom; and here I would adopt Mr. Pearson's description, as he had probably greater opportunities of observing these cases than any one in England at the present day. He says—

"There are certain peculiarities of constitution where the primary ulcer produced by the venereal virus proceeds rapidly into a gangrenous state; and, not uncommonly, the introduction of mercury at this period rather hastens than controls the destructive process. I have received patients at different times into the Lock Hospital, with the whole penis in a sphacelated state, where the infection had not been received above a week previous to their admission. To these men I gave Peruvian bark, and treated them according to the methods usually adopted in cases of mortification, without paying any attention to the remote cause of the sphacelus. The penis commonly separated near the symphysis of the ossa pubis; the sores healed; and the patients recovered, and remained well, without requiring the aid of mercury.

"In these particular instances I supposed that the early supervention of the gangrene, and the rapidity with which it proceeded, might be compared, not unaptly, to the application of a tight ligature made upon the penis, and that the absorption of the virus was anticipated by the death of the part. The truth of my opinion was justified by the event, for the men did not afterwards suffer from any form of the venereal disease, yet I do not imagine that any person will ascribe the extinction of the venereal poison to the specific virtues of the Peruvian bark.

"It may not be quite superfluous to suggest a caution against employing the mode of reasoning which I adopted in a general and unqualified manner, for I fear it would not be correct and applicable to any cases, except to those which are recent, and where the destruction of the whole substance of the infected part has been sudden and complete.

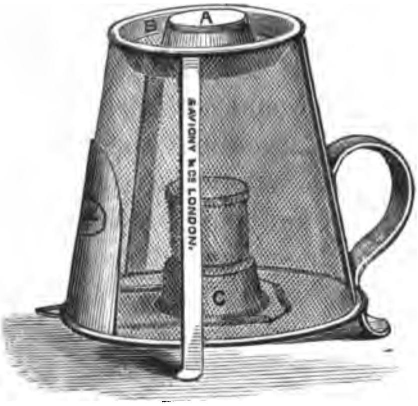
"I have said that there are certain constitutions in which a chancre on its first appearance always becomes gangrenous, and I have more than once noticed this very unfavourable occurrence in the same patient every time he received the infection, although it did not always prevail in an equal degree. In cases of this kind the Peruvian bark is indicated, as well by the state of the system in general, as by the mortified condition of the affected part. Under a proper exhibition of this medicine the sloughs will separate, the ulcers assume a clean and favourable aspect, and sometimes the sore will even granulate and heal.

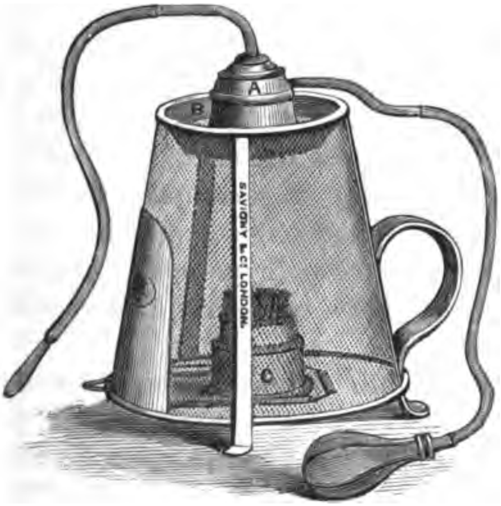
"More commonly, however, when all the parts are wearing a promising appearance, the ulcer becomes painful, foul, unequal on its surface, spreads visibly every day, and has thick and indurated edges; and at this period the health begins to decline. The concurrence of these circumstances indicate that the venereal poison has resumed an active state, that nothing farther is to be expected from the Peruvian bark, and that the administration of mercury ought not to be delayed any longer.

"Such facts as I have now stated are by no means rare and extraordinary; they must have been noticed by every surgeon who has had the advantage of an extensive practice; yet I will venture to assert that no such man ever imagines that he is, in a proper sense, curing the venereal disease while he is merely promoting the exfoliation of parts, the texture and vitality of which have been destroyed by the syphilitic virus.

"But although the cinchona is a remedy of great utility when accidents like these supervene, yet it is not a medicine proper to be given indiscriminately either before or during a mercurial course. Where its tonic qualities are not indispensably necessary, the power it has of diminishing the several secretions may often occasion it to be extremely detrimental to the person who takes it."

Although specific treatment is not required when mortification shows itself as a first symptom, yet in phagedænic ulceration it is often of great use. Of all plans of treatment the use of the local calomel bath is, in my experience, the best. A very convenient form





of apparatus* has been devised by which the sublimed calomel may be directed to any particular part by a current of air, as in the ether spray. It was invented by Dr. Moffitt, who introduced it at the Royal Victoria Hospital at Netley. This apparatus is fixed on a common fumigating lamp, and the volatilised calomel may thus be applied to parts which the vapour from the ordinary lamp would not reach.

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* The letters connected with the electrotypes refer to the printed instructions supplied by Mr. Blaise with each apparatus.

In phagedænic ulcerations the best ordinary dressing I believe to be a lotion containing five grains of sulphate of copper and five of extract of opium to an ounce of water. In spite of all remedies, however, the disease will sometimes continue. A medical man who was under my care, and under the care of other surgeons, some years ago lost the whole of the penis in front of the scrotum in this way. The disease gradually and almost imperceptibly extended, apparently uninfluenced by any remedy. In another case, where a patient lost nearly the whole of his penis in the same way, I discovered afterwards that a sinus, which opened in front of the pubis, communicated with the back part of the urethra. A small quantity of urine occasionally passed through this sinus, and the irritation produced when it was in process of formation may have been the cause of, or may have maintained, the phagedænic action.

In this case ultimately an opening was made through the perineum, in front of the membranous portion of the urethra, in order to allow the urine to escape without passing through the sinus, which then healed.

In a third case a patient had a most intractable phagedænic sore, when a sinus formed behind the glans penis, through which all the water passed. The natural channel appeared quite closed, and no instrument could be introduced. After a time, however, a slough came out of the sinus, and then the natural passage again became free. In this case the patient had well-marked secondary syphilitic disease, and the affection of the urethra depended in all probability upon the same cause.

The *mucous membranes* of the body, when affected by syphilis, do not, as we have seen, take on the adhesive form of inflammation as a rule, but they readily suppurate, ulcerate, or mortify. Yet, in certain cases, especially where portions of mucous membrane have been long exposed, the adhesive action is produced. The folds of mucous membrane, which lie in contact with each other, and the folds of thin skin, under similar circumstances, may alike become infiltrated with plastic lymph. Oval flat-raised patches, exuding a secretion from their surface, and surrounded by a red and shining skin, may appear indifferently on the nates, or in the armpits, on the mucous membrane of the mouth, or at the anus, although they are much more common near the orifice of the vagina. These are secondary affections, and must be treated as ordinary secondary symptoms would be. The local application of calomel in such cases is very beneficial. It may be applied in powder, or a patient may sit over the ordinary calomel lamp with the parts exposed. No water should be placed in the lamp when used in this manner.

Syphilitic affections of mucous membranes not unfrequently produce a modified form of suppuration. A gentleman, had been suffering for nine months with an affection of the eyes, for which he sought relief from some of the most eminent oculists in the different capitals of Europe. He had contracted syphilis some time previously, and had taken a very imperfect course of mercury, but was assured, over and over again, that, as far as the disease was concerned, he was cured. The affection of the eyes commenced by a glutinous discharge, which persisted a long time. It was followed by iritis and other affections of the deeper structures of the eyes, and when I saw him, at the expiration of the nine months, he had a tubercular eruption on the body, a node on the lower extremity of the fibula, and pains in the wrists and face. Immediate and rapid improvement took place under the combined influence of sarsaparilla and the calomel bath, and at the end of three months he was considered well.

I note this case only as showing the nature of the secretion from a mucous membrane in a syphilitic case.

A gentleman and his wife both had constitutional syphilis, and would not undergo any systematic treatment. From time to time fresh manifestations appeared, and every two or three months the lady had a discharge, accompanied by no other inconvenience than that of imparting a slight discharge to her husband. This had occurred many times. Several cases have come under my notice where in the course of a syphilitic disease a urethral discharge has appeared for which there was no other apparent cause. Some of these instances, and the nature of the discharge, have been considered in a previous Lecture, and I now notice them to insist on their syphilitic nature in reference to treatment.

CASE LIV.—A gentleman had a urethral discharge, accompanied by much general swelling and redness of the mucous membrane of the glans penis, but there was no ardor urine.

He informed me that he has fairly exhausted his surgeons' and his own patience, and nothing appeared for the number of months he had been under treatment to have done him any good. Upon examining him I found the glands in the groin enlarged. The swelling of each gland was accurately circumscribed and distinct. The surrounding cellular tissue was not in any way involved. This led me to examine further, and I then discovered an eruption on the patient's back, and an incipient ulcer in his throat. There was here no history of any indurated chancre, but some months before he had had, as he said, two soft sores. This patient was immediately placed under mercurial treatment, and the urethral discharge and inflammation of the glans penis at once subsided. Had it not been for the condition of the inguinal glands in this case I should probably not have made out the real nature of the case, and should have prescribed for the urethral discharge only.

I subsequently ascertained that a lady with whom this patient had been living had constitutional syphilis. She had none of the symptoms of gonorrhœa which she certainly would have had had the gentleman's affection been of that nature.

The mucous membranes of the rectum and the mouth are very frequently affected with secondary syphilitic disease, and the diagnosis in such cases is sometimes by no means easy. A patient will complain of the usual symptoms of piles, for which the ordinary remedies may be used, and he may be relieved, but the symptoms will recur again and again. A syphilitic history may then be made out, and the affection permanently cured. In such instances there is much more solid matter deposited in the hemorrhoidal tumours than in ordinary cases, but, nevertheless, from inspection alone it might be very difficult to distinguish them.

Case LV.—A gentleman was lately brought to me by a medical man in this neighbourhood, who had suffered from piles for years, and an operation had been proposed. The tumours were solid, and projected about $\frac{3}{4}$ of an inch. They could not be returned into the bowel. Upon investigating his case it was found that there were some very suspicious-looking sores in the perineum. There were amygdaloid glands in the groins, and an eruption on the back. He had also suffered from sore throat. This patient had never to his knowledge had any primary sore, but had had a gonorrhœa which lasted him two years. Taking all the circumstances into consideration, I did not doubt but that his symptoms were syphilitic, and treated him accordingly, and with marked and immediate results.

Case LVI.—A patient was recently admitted into St. George's Hospital for operation with what was supposed to be piles and a painful fissure of the rectum. From the thickened state of the mucous membrane, as well as from the patient's history, I believed the affection to be syphilitic, and ordered him a mild course of mercury, under which his symptoms rapidly, and I believe permanently, disappeared.

The occasional connection between piles and other syphilitic affections, as observed in this case, was well known to Shakespeare. In the third scene of the first part of "King Henry VI.," in the controversy between the Bishop of Winchester and the Duke of Gloucester, the latter calls the former a "piel'd priest." What Shakespeare exactly meant by this is evident from the second scene of the first act of "Measure for Measure." A gentleman there speaking, as he says feelingly, calls Lucio a three piled piece, and Lucio confesses that under the roof of Madame Mitigation he had contracted as many diseases as would entitle him to a French crown.

In this place Shakespeare also shows that he well knew that secondary symptoms could be communicated, although he fell into the same error that Hunter and Ricord subsequently did, of not distinguishing between the inoculation of the disease upon a person already infected, and one who was not. Lucio, who acknowledges having the French disease, says that he shall in future decline to drink after the piled gentleman. If Shakespeare had warned others who had not been previously infected to do this, it would have been more to the point, and his physiology upon this subject would have been perfect.

In illustration of Shakespeare's view, I may mention Case LVII., that occurred some years ago. The housekeeper of a very highly esteemed physician in London had an eruption, which recurred again and again, and excited suspicion. She was told that something must be wrong, which she readily believed, but appeared incapable of comprehending what it could be. At length she was given to understand the suspicious nature of her case, and became greatly incensed at the aspersion thrown upon her character. After a time I saw this patient, and told her the nature of her malady. Again she became very much excited, and said that she would tell her friends what imputations had been cast upon her. I advised her not to do that, inasmuch as she might spread a report, which hereafter, however innocent she might be, she would not have the means of contradicting. An examination was proposed, to which she immediately assented.

The parts were in their natural virgin condition, and there was no enlargement in the glands of the groin. A further investigation of the case now took place, and I found some accurately defined enlarged submaxillary glands. This led to a careful examination of the mouth, and at the back of the tongue was a raised indurated patch, rather larger than a sixpence. Upon inquiry it turned out that one of her fellow-servants, who was in the habit of using the same glasses and spoons, had during the time suffered from an eruption on the skin. The whole of the circumstances in this case I investigated as carefully as I could, and no doubt was left upon my mind that the secondary disease had been conveyed from mouth to mouth.

A very peculiar affection of the mucous membrane of the mouth is sometimes, though rarely, observed in the development of the secondary manifestations of syphilis. The whole of the mucous membrane of the gums, cheeks, and tongue becomes inflamed, and the symptoms very much resemble those of profuse salivation.

Case LVIII.—A gentleman had a very trifling irritation on the skin of the penis, but a lymphatic gland on the corresponding side became as large as a crow-quill, and remained in the same state for many days. The inguinal glands became enlarged and painful, but did not suppurate. Secondary symptoms followed. There was no suppuration or ulceration during the whole course of the disease. This gentleman had not taken any mercury, but in the course of the secondary manifestations, and as a part of them, violent salivation occurred. The discharge of saliva from his mouth was so great that in the morning he constantly found his whiskers and beard glued to his pillow.

I have seen five or six instances in which symptoms resembling salivation could be traced to no other cause than the development of the secondary manifestations of syphilis, and in one case this affection, together with the other symptoms, subsided under the use of mercury.

Another peculiar affection of the mucous membrane of the mouth is where the inside of the cheeks, or upper surface of the tongue, becomes covered by a white layer resembling thin cartilage. On the inside of the cheeks, as I have seen it, it is firm, white, and disposed in folds; on the tongue it is thicker, softer, and forms a more uniform layer. In one case of the former kind, treatment appeared to have no effect, and in one of the latter the mercurial treatment was attended with immediate and marked improvement. In a third case, which has occurred recently, and in which the tongue was affected, the patient thought himself benefited at first, but at the expiration of three months was much in the same condition as before.

Connected with, and probably depending upon, disease of the mucous membrane, are secondary affections of the nose. These are among the most intractable cases which we have to deal with, and often continue for years, to the great discomfort of the patient. Sometimes the bones of the nose are swollen and tender, but in general there is no external appearance of disease; but there will be an increased secretion from the nostrils, and the discharge will be occasionally tinged with blood. On approaching the patient a peculiar offensive condition of the breath is perceived, and of this the patient himself may or may not be conscious. In the later stages of the disease patches of thick, dry, adhesive mucus come away, and after a time, perhaps a piece of exfoliated bone. The most troublesome cases of this kind are occasionally those in which the cartilages of the nose are affected, but the same symptoms will sometimes persist for months or years without there being any evidence either of the bone or cartilage being diseased. Local calomel fumigation is often of much use in such cases; and its specific effects on a patient's constitution, although, perhaps, not so much indicated in this as in some other forms of syphilitic disease, is still of advantage. Great benefit is also, in such instances, often derived from sarsaparilla, given in sufficient quantities, and for a sufficient time.

Case LIX. A patient, who had formerly been under the care of Sir B. Brodie, had a troublesome affection of this kind, which had lasted nine years. Upon examination the septum of the nose was found to be perforated, and the edges of the opening were still ulcerated. This patient took a calomel bath every night for about two months, when the ulceration had quite healed, and I have reason to believe that it has not recurred.

Some parts of the mucous membrane, when affected by syphilis, may run rapidly into mortification. This is most frequently seen in the throat. It may, however, occur in the vagina. In one case which came under my observation, the whole, or nearly the whole, of the mucous membrane of the vagina sloughed away, and the canal was all but occluded by subsequent cicatrisation. When sloughing occurs here it is preceded by a deep livid congestion of the parts; but in the throat the sloughs are generally of a white ash-colour.

These conditions illustrate two forms of gangrene, one in which the vessels are overloaded with blood which stagnates in them, and the other in which there is less blood than usual in the part. This form, of what I may term white gangrene, may at any time be artificially produced by keeping an india-rubber band stretched on the skin over the extremities of an acupressure needle. It depends upon a deficient supply of arterial blood, and, in cases of disease, is probably the result of obstruction, from some cause or other, of the small arteries which supply the part.

This is probably the explanation of the light slate-coloured mortification of the penis in the case previously mentioned (see p. 144).

In sloughing ulcers of the throat, mercury administered internally, or by inunction, is seldom of any avail; but I have found the best results from the use of the calomel bath. The patient, in these instances, has been directed to inhale a full quantity of the vapour, and its local effect has had probably as much, if not more, to do with result as its general action on the patient's system.

The tonsils are subject to two principal forms of ulceration from syphilis—

1. These glands may become covered by a whitish exudation, surrounded by a livid congestion. The surface of the affected part appears irregular, and has generally been supposed to be ulcerated; but that there is no true ulceration in the great majority of these cases, is proved by the fact that no cicatrices are left after the inflammation subsides. This affection is often accompanied by some degree of deafness, and by a disagreeable taste in the mouth, but the act of swallowing is not interfered with.

2. A deep excavation may appear in one or both tonsils. This also generally presents the appearance of being covered with a whitish slough. The disease does not usually extend beyond the tonsils, and is often attended by a peculiar and offensive smell.

Both these conditions probably depend upon the structure and position of the parts. The natural secretion of the tonsils resembles that of the sebaceous glands. This secretion is changed in character and quantity when the part is inflamed. If the inflammation be superficial, then the increased and altered sebaceous discharge is thrown out on the surface of the gland. If the inflammation extend deeper, the increased discharge accumulates in the substance of the gland, and when it bursts it leaves a deep cavity resembling an ulceration; but even here there is generally no perceptible loss of substance when the part is healed.

The reason why the throat is so often affected in syphilis, is probably from its constant exposure to streams of fresh air, and to the irritation of substances swallowed. It would appear that the sebaceous glands are most frequently affected in those parts of the body which are most exposed. In the parts that are generally covered, or where the sebaceous glands are fewest in number, they are affected at a later stage of the disease, or less frequently. Thus eruptions on the arms and thighs of men in an early stage of the disease are comparatively rare, as compared with the same affections in women; and in both sexes the sebaceous glands at the root of the nose, or on the eyelids, or at the roots of the hair, are very frequently inflamed.

Mr. Pearson observes that formerly mercurial fumigation was employed in almost every case of ulceration of the throat, and that it was very successful in quickly arresting the progress of the disease. For this purpose a proper fumigating machine was used. Thirty or sixty grains of cinnibar were placed on a heated iron, and the fumes were directed, by means of a tube, to the affected parts. So many inconveniences were however found to attend this mode of practice, that it was seldom used in Pearson's time in private, except in very severe cases. The fumes were found to excite coughing and uneasiness in the chest, and to irritate the lungs. Increased determination of blood to the brain was sometimes thereby produced. The irritation mentioned was no doubt produced by the sulphurous acid gas which is evolved during the sublimation of the cinnibar. This, as well as the other inconveniences experienced, is now obviated by the substitution of calomel fumigation, used either locally or generally, as has been described.

Mr. Pearson observes that "a patient rarely, if ever, recovers when the *larynx* is affected." This, I am happy to say, is directly opposed to my own experience. I have had several cases in which the larynx has been affected, and where the voice has been lost to a greater or less extent, and in which the patients have perfectly recovered.

The *areolar tissue* is very liable to be affected by a low form of adhesive inflammation, and this may, after a time, terminate in suppuration, or ulceration, or sloughing. Chronic nodular tumours will often form beneath the skin, and remain in much the same condition for weeks. After a time they generally slowly soften down. The skin over them breaks, and a ragged ulcer is left, with overhanging edges, the cellular tissue having been destroyed to a greater extent than the skin. In other cases the newly-formed material becomes absorbed; and in others, again, the affected tissue will slough in small circumscribed patches, and when the little slough comes away, the peculiar honey-combed appearance is left, to which I have before referred. One important practical variety of such deposits demands particular attention. The cellular tissue of the prepuce may become affected. A well-defined circular induration may then be formed, which, in its objective characters, exactly resembles a chancre.

Case LX.—A young gentleman, whom I had treated for syphilis, went abroad, and discontinued his treatment sooner than I would have wished. He returned, in the course of two or three years, with an induration on the prepuce, exactly resembling that produced by a primary affection. I thought, at first sight, that it must be a case of reinfection, but I was soon satisfied that this was not the case. This gentleman had not exposed himself to contagion from the time of my first seeing him, and there was no enlargement of the inguinal glands. The treatment of the plastic effusions that occur in the subcutaneous cellular tissue in syphilitic cases may consist of various preparations of mercury or iodine, combined with sarsaparilla or tonics. A modified and mild mercurial course only is required.

LECTURE VI.

SECOND STAGE OF LUES VENEREA—TREATMENT.

THE symptoms, of what Hunter calls the *second stage of the lues venerea,* affect the deeper structures of the body. Those particularly mentioned by Hunter are the periosteum, tendons, fasciæ, and ligaments, and to these may now be added all the internal organs of the body. The processes in this second stage of constitutional syphilis go on more slowly than in the first. These manifestations of the second order increase by slow degrees, and show but little signs of inflammation. The action in this class of affections seldom gets beyond the stage of the adhesive inflammation, and if suppuration ultimately takes place, the matter formed is a viscid, slimy secretion, and differs essentially in its appearance from true pus.

In what proportion of cases constitutional syphilis may affect the cartilages of the joints, has probably not at present been determined. There can be no doubt that syphilis affects the non-vascular, as well as the vascular, structures of the body. The cornea, the cartilages of the larynx, the lining membrane of the blood-vessels, the formed material of the teeth, the hair, and the nails, are all subject to its influence; and I feel satisfied that the cartilages of the joints are not exempt.

Case LXI.—Many years ago I saw a patient suffering from a well-marked syphilitic eruption. During the progress of the case he was attacked with very severe pain in one knee. After his death a large portion of the cartilage of the knee-joint was found to have been ulcerated. The ulceration was accurately defined, and the loss of substance was replaced by very vascular and thickened synovial membrane. This completely filled the cavity, and had probably grown by feeding upon the diseased and degenerated cartilage.

When the bones are affected in syphilis, the pain is sometimes very severe, at other times it is slight. It often occurs periodically, and is generally worst at night. This has been supposed to depend upon the growth of the body being more active during the time that the nervous and vascular actions of the body are less employed in other ways.

Four very distinct processes may be observed in syphilitic affections of the bone, and these correspond with the analogous actions in soft parts.

1. The bone itself may become inflamed, and its cancellous structure filled with fresh bony deposit. The thickness of the bone is commonly increased, and it becomes much heavier than natural. This action corresponds with the adhesive inflammation in soft parts. The museum of St. George's Hospital contains some remarkable specimens of this disease.

2. The affected bone may ulcerate with or without any corresponding ulceration of the skin. Considerable portions of the outer table of the skull may occasionally be removed in this way, without any

external wound. In other cases the action commences in the cancellous structure of the bone, and gradually perforates the external plate. A soft tumour may then be felt externally. This contains a glary fluid, and communicates by a small opening with the interior of the bone.

3. Suppuration may take place in bone as a consequence of syphilis, and

4. Mortification.

These two latter actions are generally the result of one of the former, but not invariably so. A node will sometimes contain a fluid resembling pus at a very early period, and necrosis may occur without any thickening of the bone and without any previous ulceration or suppuration.

In one case of this kind under my care one side of the vomer came away entire, with its ala complete where it articulates with the sphenoid. The other side of the vomer was left unaffected, and the shape of the nose was not in the least altered. In another case the disease appeared to have commenced on the inner table of the skull, and to have produced inflammation of the membranes of the brain, and softening of the brain itself (see Case LXXVI.)

By far the greatest number of cases of supposed syphilitic affection of bone originate in the periosteum. This membrane becomes inflamed and thickened, and, if the action continues, fresh bone may be formed. The outline of the original bone will not be altered, but fresh bony matter will be deposited, as it were, upon it. In old cases a cancellous structure may be formed in the new bone, and we may have two layers of cancellous structure and two layers of compact bone. The original cancellous structure of the bone remains unaltered, and the cortex of the bone remains of its natural thickness. Outside this there will be a cancellous structure, and then a thick layer of compact bone enclosing the whole. The pain in such cases is usually very severe.

In milder cases there is always pain and tenderness in the affected part, but these may with great certainty be relieved by the iodide of potassium. The pain generally ceases or is materially relieved on the fourth or fifth day after the patient has commenced the medicine.

In the *treatment* of *affections of the Bones* sarsaparilla, properly given and in sufficient quantity, is often of the greatest use. Many surgeons, I know, have no great faith in this remedy, but comparatively few have perhaps had an opportunity of witnessing its effects. As commonly prescribed it is given in very inefficient doses, and I have found that some of the best chemists in London are in the habit, when the decoction is ordered, of putting in, instead, what they consider an equivalent of the extract. This saves time and trouble, but prevents both the surgeon and the patient from witnessing the real effect of the medicine.

Case LXII.—Many years ago a gentleman of delicate constitution consulted me for long continued and severe pain in his tibia. There was no doubt at the time that the affection was syphilitic. He had already undergone a great variety of treatment, and I did everything which I then knew for him in the way of medicine. The pain, however, continued with great severity, preventing him from sleeping night after night.

At length, in order to relieve the tension, I trephined the bone. This was followed by relief, and I thought my patient was going to recover. The pain, however, recurred, and, after an interval, I removed a second portion of bone. The pain again temporarily ceased, but came on again after some time as badly as ever. Some months elapsed, when the patient consulted a highly esteemed late member of this council, who was a friend of his, and who saw him in that capacity.

As time went on the patient was sometimes better and sometimes worse, when the sufferings became so acute that it was thought some further measures must be taken, and the gentleman under whose care he then was proposed to remove the limb. Before having this done the patient thought he would have the advice of Sir B. Brodie, and accordingly called on him one morning. Sir B. Brodie directed him to send to the Apothecaries' Hall every morning and get a pint of the simple decoction of sarsaparilla, and to take that daily for six weeks before he saw him again. In two or three months after the patient had commenced this treatment he again called upon me to show me his leg, which he could now use very freely, and which gave him no inconvenience. I had an opportunity of seeing this patient for many years afterwards, and the pain in the bone did not recur.

Case LXIII.—A very intelligent patient, who had long suffered from diseased bone in the nose, and who had undergone a variety of treatment in different parts of the world, wrote to me in November last:—"Now that there appears a distinct prospect of my recovery, I must write you a line . . . . of all medicines and treatment I have tried during these several years I have no hesitation in saying that I have derived more decided benefit from sarsaparilla than anything. It was only a question of how much I took of it. Not one doctor in a hundred will admit that it is of any use whatever, simply because they do not try enough of it."

In many cases, however, sarsaparilla will not cure the disease or relieve the sufferings of the patient.

CASE LXIV.—I recollect a young woman in the old Lock Hospital who died apparently worn out with incessant suffering. Upon a post-mortem examination, the femur was found double its natural diameter, a new layer of cancellous structure had formed outside the natural shaft of the bone, and outside this again a thick shell of bone, irregular on its surface, and covered by a greatly thickened periosteum, was found. There was no disease of any internal organ to account for death. In this instance sarsaparilla was given to a very large extent without any permanent benefit.

The brain is often affected during the course of the syphilitic disease. I have had few opportunities myself of examining the morbid appearances produced, except in cases where the affection has originated in the bone, or in the membranes of the brain. But the brain itself, no doubt, often becomes diseased independently of any such affections.

Tiedemann was, I believe, quite right in attributing many cases of diseased arteries to syphilis. The arteries of the brain would not be exempt from such, and here the results would naturally be much more pronounced, and would manifest themselves much more suddenly than in other parts.

CASE LXV.—A patient, who formerly had syphilis, and still had the stains of the previous disease upon his legs, suffered from indigestion. With these exceptions, he was a young healthy man. He had, however, placed himself under the water cure, and had, under advice, abstained from all spirits, wine, and beer, and in a great measure from meat. He was suddenly seized in a coffee-house with paralysis of the whole of the left side, including the tongue and face. He was not insensible, when I saw him soon after the attack. He had pain in his head, his vision was confused, but there was at first no strabismus nor difference in the pupils of the eyes. He had a severe attack a few days afterwards, became completely paralytic, and died.

CASE LXVI.—A young gentleman who had been in different parts of the world, otherwise healthy and strong, had constitutional syphilis, for which I treated him. Circumstances prevented him from concluding his course, and he was obliged to return to his duty. A few months afterwards, without any other apparent cause, he was attacked with a fit of apoplexy.

Cases in which cerebral mischief is connected with *mental excitement* are also not very uncommon.

CASE LXVII.—A captain in the army, under the care of Dr. Tuke, was in a continued state of mental excitement. He talked incessantly, and had a flow of the highest spirits. His muscular strength, however, gradually diminished, and it was observed that he walked with his legs apart, so as to secure a broad base, and it was thought that he was gradually passing into a state of general paralysis. Attention was now drawn to some hæmorrhoidal affection, and in investigating this the existence of syphilitic disease was clearly established. For this he was treated. He completely recovered his muscular power, and lost his previous delusions. He was, however, now as much depressed in spirits as he had previously been excited.

I here again allude to the subject of hæmorrhoidal affections in connection with syphilitic disease of the brain, in order to distinguish two very different conditions, which are likely to be mistaken for each other,—namely, protrusion of the mucous membrane depending upon local disease, and relaxation of the sphincter muscle from nervous debility. In one case the mucous membrane is inflamed and thickened; in the other case the mucous membrane is protruded in a relaxed and congested, but not in an inflamed state.

CASE LXVIII.—A gentleman, who had worked very hard and drank very hard, fell into a listless apathetic condition. The left eye was shrunk, and he had partial ptosis of the left eyelid. He lay for weeks in a lethargic condition, with a fire in his room even in the hot days of July. He never roused himself except to take a drive in the evening, or for his meals. He walked with his legs far apart, and supported himself as far as he could with his hands. He complained of piles, and suppositories were ordered. These, after a time, he discontinued, as he could not retain them. There was ordinarily no protrusion of the mucous membrane in this case, and the local affection depended evidently upon a relaxed condition of the sphincter muscle as a part of the general nervous debility.

CASE LXIX.—A medical man who had spent many years in India, and had contracted syphilis before he went, and who had been originally treated without mercury, returned to England with rupial eruption and ulceration on different parts of his skin. He lost the sight of one eye and a great part of one eyelid. He drank freely, but not to any great excess. For several months during the progress of his case he had the most buoyant spirits, and nothing seemed to come amiss to him. His excitement increased, and it was necessary to place him under restraint. After a time he became as much depressed as he had been previously excited, and the depression assumed the same chronic character. He was cured of his physical ailments by means of a mild and sustained course of mercury, and, after a time, his mental condition became so much improved that he was enabled to return to his duty in India.

CASE LXX.—A young gentleman, otherwise healthy, suffered for a long time with symptoms of constitutional syphilis. He had a variety of nervous symptoms in his limbs, such as pain, numbness, and sensation of pins and needles. It was observed that in his correspondence he described all his business transactions in an exaggerated manner. He then talked constantly about horses and carriages, and wished to have two stage coaches. Ultimately he became paralytic on one side and died.

I have insisted at some length upon affections of the brain in connection with the later stages of syphilis because I believe they are much more common than is usually supposed; and I have noted particularly a condition which may be designated as partial paralysis of the brain, following a state of morbid excitement, as we shall in a future Lecture have to consider an analogous local condition connected with a particular system of nerves. The cases which I have hitherto given are instances of disease occurring in the brain itself, and not communicated to it from its coverings; the following, on the other hand, are instances in which the disease first affected the bone or the membranes of the brain, and subsequently affected the brain itself. The first case occurred under the care of Dr. Barclay; and I may mention generally, that, where the name of some other medical man is not given, the patients were under my own care.

CASE LXXI.—Thomas Wells, æt. 32, was admitted into St. George's Hospital on February 14, 1872. Five months before, he suddenly lost the power, to a certain extent, of the right side of the body, and was able to speak only with difficulty. He had had an attack of syphilis eighteen months previously.

When admitted his speech was thick, and he was with difficulty understood. There was marked facial palsy on the left side, with ptosis of the left eyelid. The tongue protruded to the left side. The right arm was all but powerless.

On a post-mortem examination the following morbid changes presented themselves:—

Connected with the membranes of the brain in several places were tumours, partly fibroid, partly degenerated into caseous matter. One of these was found between the dura mater and skull, on the upper surface of the left hemisphere.

It was about the size of a florin, and half an inch thick.

Another grew from the dura mater in the right temporal region, a third occupied the sella turcica, and pressed upon the right optic nerve.

In both sylvian fissures were masses of similar appearance, rather larger than hazel-nuts, which grew from the pia mater, compressing the cerebral convolutions. The left optic nerve was atrophied from pressure of the tumours in the sella turcica. A portion of the morbid growth over the left hemisphere was microscopically examined by Dr. Whipham. It was found to consist of brightly glistering nuclei in great numbers, imbedded in a meshwork, which in some places was fibrillated, in others indistinctly reticulated. This latter appearance was less frequently met with. The nuclei showed a tendency to arrange themselves in parallel lines, in other places they had become elongated and oat-shaped, and in others, again, distinct fibrous tissue had been formed. The yellow soft parts of the tumour were found to be degenerated cells and the debris of fibrous growth. The vessels were few in number and small.

The growths in the sylvian fissures were in a much earlier stage of development, and soft; in them the vessels were extremely abundant, and their walls very delicate. Surrounding these vessels was a highly nuclear growth, in which no tendency to fibrillation could be detected. These nuclei were far less bright and glistering than those found in the growth from the dura mater. They varied much in shape, but were, for the most part, of a uniform size. The stroma in which they were imbedded was, in the main, granular and indistinct, though in some places newly-formed fibrous tissue was clearly visible. The drawing shows the microscopical appearances.

Throughout the liver were small semi-transparent nodules of newly-formed fibrous tissue. These nodules were of a rather lighter colour than the liver structure, and were found in considerable numbers.

Case LXXII.—A gentleman who has had syphilis seven years previously, but had never taken a proper course of mercury, had a kind of epileptic fit. He, however, continued his usual occupation, when, after some months, he was seized with another attack, presenting the usual symptoms of epilepsy, and terminating in a deep sleep. He then lost the use of the right side of the body and right side of the face. He articulated with difficulty, and sometimes was scarcely able to speak at all.

Case LXXIII.—A gentleman who had suffered from constitutional syphilis, and had not been treated with mercury, lost the use of his right forearm. The muscles of the upper arm were comparatively little affected. There was want of power in the right leg, but not to the same extent as in the arm. From these symptoms he gradually recovered, but for many months the right arm was weaker than the left.

Case LXXIV.—A gentleman had lost a part of the hard palate from syphilis when I first saw him. The frontal bone then became affected, as well as the turbinated bones in the nose. He complained of numbness and want of power in the right hand, so that he could not well write. This symptom continued many months. A large portion of the outer lobe of the frontal bone died and came away. The numbness in the hand ceased, and his intellect remained quite unimpaired. In this case there was very extensive ulceration of the soft palate, and the loss of several pieces of bone from the base of the skull. The disease had evidently involved both the sphenoid and ethnoid bones.

Two of the portions of bone removed from the forehead involved the inner table, which contains the grooves for the arteries running between it and the dura mater.

Case LXXV.—Mary B., æt. 24, had syphilis, followed by a general eruption, six years before she came under my care. Six months previously a large node formed on the forehead and burst. She was unable to walk without assistance, the want of power being chiefly in the right leg. A piece of the frontal bone, about 3 inches in diameter, was exposed, dry and black. She had nodes and ulcerations in different parts, to which I need not now particularly allude. This patient lost the sense of smell, and almost entirely the sense of hearing. The sensibility on the right side of the face was impaired in a marked degree, and there was occasional tingling and involuntary twitching of the muscles of that side.

A crown of a large trephine was applied over the centre of the exposed frontal bone, to the left of the medium line, and the entire thickness of the bone included in the circle was removed. The exposed dura mater bled from a few points, but presented elsewhere an opaque white surface which did not bleed. The internal table of the removed portion of bone was roughened in a very peculiar manner, soft and very vascular. It presented numerous soft and sharp elevations, and gave the general appearance of having been worm-eaten. Three days after the operation the patient had strabismus of the right eye. This occurred every morning, and was seen when the patient awoke. It lasted two or three hours, and then passed off.

A fortnight after the operation the sensibility of the right cheek had returned. There had been no return of the strabismus.

A week after she could hear perfectly when spoken to in an ordinary voice, and was gaining flesh rapidly. During the next two or three months there were no nervous symptoms, with the exception of insensibility of one-half of the upper lip, which continued.

This patient now left the hospital, and was lost sight of for a considerable period. When she died I was enabled to obtain the skull, which shows that there had been very extensive mischief in the frontal sphenoid and ethnoid bones. The disappearance of the nervous symptoms in this case, after the operation, shows they depended upon irritation produced by disease of the bones, and not upon any affection of the brain itself.

In another (CASE LXXVI.) in which I trephined the skull in expectation of finding a piece of diseased bone, I was not so successful in hitting the exact spot. A portion of the inner table of the skull in this instance had become necrosed, and produced, first, inflammation of the membranes of the brain, and subsequently led to softening of the brain itself, as shown in a drawing by Dr. Westmacott. The internal table only of the skull had perished in this case, and there was no means of ascertaining exactly its position. The portion of bone removed was, however, within a quarter of an inch of the necrosis from which the disease of the brain had apparently originated. This patient was a man of wonderful physical development and strength, and healthy in every respect, until he contracted syphilis, so that there could be no doubt in his case as to the cause of the malady.

The development of the morbid changes which may take place in the second stage of lues venerea, in internal organs, are well illustrated by what we occasionally see in the *tongue.* Here also we may sometimes witness the transition from the first stage to the second. The superficial ulcerations and enlarged papillæ of the tongue in syphilitic patients must be classed with similar affections of the skin in the first stage of the disease; the syphilitic tubercles of the tongue, with similar affections of internal organs in the second stage.

In our collection are several beautiful models, by Barétta, of syphilitic disease of the tongue.

No. 257 is a model, showing patches of tubercular thickening of the surface of the tongue, with a prominent ulcer surrounded by a projecting border at the tip of the organ. There is also a small papulous growth at the commissures of the mouth, and a crop of erythematous spots of a syphilitic character dispersed upon the face. Hardy terms the case "plaques muqueuses végétantes." The patient was a woman, fifty-four years of age, and the disease yielded rapidly to the iodide of potassium and local cauterisation with nitrate of silver.

No. 259 shows the tongue affected with *syphiloma*, together with a small superficial ulceration of the surface, and another at the edge of its right lobe. The syphiloma is indicated by swelling of the lobes, and the case is termed by Hardy "gomme de la langue," the gummata or gummated tumour of syphilographists. The border of the tongue, at its under surface, is deeply indented by the teeth.

No. 260 is a model of a tongue, showing considerable enlargement, both in length and thickness, of its right lobe, from *syphiloma*. The tongue is red, and a morbid change is perceptible in the follicles, which resemble small pustules, while towards the back part there exists evidence of superficial ulceration. A papular eruption is scattered upon the cheeks, and one papule is seen on the ridge of the nose. The case is named by M. Broca "gomme tuberculeuse de la langue."

In a case some time ago under my care in St. George's Hospital, the patient, when admitted, had lost the whole of her tongue from syphilitic ulceration, with the exception of a piece at its root, the size of half a leech. The parts completely healed under the use of the calomel bath, and the patient soon learnt to speak without her tongue, so as to be distinctly understood. In another case, which ultimately came under my care, the patient had been treated for years sometimes for a syphilitic, sometimes for a cancerous disease.

At length ulceration extended through the base of the tongue, and the remains of the organ dropped off. In a third case, a commercial traveller, who was necessarily much exposed to cold, had deep fissures and numerous tubercles on his tongue. The part was affected to that degree that he could scarcely speak, so as to be distinctly understood. This patient had undergone a great variety of specific treatment, including several courses of mercury; and had repeatedly tried the effect of leaving off all medicine. He was cured by a course of the simple decoction of sarsaparilla. The effect of this remedy was so pronounced and decided, that there could be no doubt that his cure depended upon it.

Now, in such cases, where the disease manifests itself in well-defined patches, or where distinct tubercles are formed, it is easily recognised, but this is not the case when the syphilitic action is diffused. I have here the drawing of a case in which the whole thickness of the tongue was involved, and in which the diseased surface ulcerated. The patient was a long time under my care, and I could never make up my mind whether it was of a syphilitic nature or not.

It is so again in the internal organs of the body. Distinct syphilitic tubercles we recognise, but where a syphilitic action is diffused through a large portion of an internal organ, it is often impossible to distinguish the syphilitic from other forms of disease.

A well-defined node in a bone we may pronounce to be distinctly syphilitic, but where inflammation attacks a large portion of a bone it would often, if not generally, be impossible, from the morbid appearances alone, to diagnose the nature of the disease.

We may go further, and say that disease often remains as a consequence of syphilis, long after any morbid appearances, at least any that we can detect, have passed away. An affection may not be syphilitic, but may be something that remains as a consequence of syphilis. It is not cachexia in the ordinary acceptation of the term. The patient's body will be well nourished, and we may not be able to say that any one function is deranged in particular, but yet he will say that he has never been himself since his first attack. The most common affection of this nature is probably pain in different parts, especially on any sudden change of temperature. Such patients will rarely venture out without a greatcoat, and they are generally considered rheumatic.

In a passage to which I have before referred, Shakespeare shows that he was acquainted with this form of disease. Madame Mitigation is asked which of her hips has " the most profound sciatica."

Again, in affections of the nervous system, long after any objective symptoms, which we could call syphilitic, have passed away, and where we should in vain look for any morbid changes that we could associate with any specific disease, an impression remains which leaves the patient in a different condition to that in which he was before. There may be a want of nervous power, which may show itself in a great variety of ways. Patients lose their energy, and the power of concentrating their ideas. They may find themselves incapable of the same amount of bodily exertion, or find that they have no longer much interest in their former favourite occupations. In all such cases it is extremely difficult to distinguish the symptoms, the result of specific disease, from those which may arise from other causes.

In reviewing the different remedies which have been mentioned for syphilis, I would conclude that, as far as the extinction of the disease is concerned, there is no remedy that can be compared to mercury, and that, where the symptoms arise from syphilis alone, it may be used judiciously in the later, as well as in the earlier, forms of the disease. Of all the forms of using mercury its administration by fumigation to the whole surface of the body affords the most satisfactory results. 1. From the extent of surface to which it may be applied; 2. From its cleanliness; 3. From its meeting the diseased actions where they in general manifest themselves; 4. From its not acting injuriously on the digestive organs; 5. From its applicability to almost all cases; 6. From the length of time which it may be employed without injury to the patient's constitution; and 7. By its tendency to develope the manifestations of the disease on the surface of the body. Of all forms of mercurial fumigation, that with the vapour of calomel, which has been already resublimed two or three times, is the best, inasmuch as the calomel is not decomposed in the process, and it is comparatively unirritating when inhaled.

The grey oxide of mercury, when used in the same way, is efficacious in proportion to the lightness of its colour, and this probably depends upon the quantity of calomel which it contains.

Hunter had a great idea of bark as a tonic. Other tonics, he believed, often produced action without power, but he believed that bark imparted real strength to a patient's constitution, so as to enable him to carry out the different processes or "intentions" of diseased and healthy actions.

When a diseased action, depending upon a constitutional cause, is imperfectly performed, it will be repeated in a somewhat modified form; and this may occur again and again, until the intention is attained, or until it is superseded by some other action. Many of the so-called local and constitutional affections, to which we apply the term "irritable," depend upon this. An action is commenced which the patient's constitution has not the power to carry through, and fresh attempts from time to time are made in the same direction, and the local or constitutional affection is modified but not cured. An irritable ulcer, in a strumous constitution, affords a ready and familiar example of this kind of irritability.

In all such cases anything that will impart real strength to a patient's system shortens the duration of the disease, and the different preparations of bark are very useful in this respect in syphilis, as they are in other diseases. The way in which a syphilitic eruption imperfectly developed will recur again and again may be illustrated by an analogous process, which may often be observed in the formation of a common boil. In a healthy state of constitution the adhesive action will first take place, healthy suppuration will follow, and the disease terminates when the pus is expelled. If the adhesive inflammation extends beyond the required limits, or if the suppurative action is imperfect, the disease may recur again and again in the same spot; or the process may be repeated in other parts of the body. In syphilitic affections I always look with a degree of suspicion upon instances in which the eruption on the skin is slight or ill developed. They are the cases in which the disease proves most tedious, and in which internal parts are most likely to be affected.

In patients who have suffered from strumous or other constitutional diseases, syphilis is very likely to be developed imperfectly, or in a modified form; and such patients are very likely, indeed, to have their treatment very imperfectly carried out. The mode of curing such patients, in my opinion, consists not so much in giving them an imperfect and interrupted course of specific treatment, as in such a judicious course of tonics as will enable the patient to carry out the different intentions of the diseased actions, and of the remedies employed. All kinds of tonics may be used for this purpose, and most physicians and surgeons have their favourite prescriptions. I strongly incline to Hunter's opinion that where strength only is wanted, bark is the best medicine. Much more may, however, be often done in such cases by diet than by drugs; and among the articles of diet which I have most often recommended, and, as it has appeared to me, with the greatest amount of benefit, is Barclay's stout. This may seem a trifling matter to mention here, but practically it is of much importance both to the patient and to the surgeon to find a tonic which may be conveniently taken for a long period. I have had a number of patients who have told me that they could not drink beer or porter. They have been directed to send for a cask of stout to Barclay's Brewery, and they have been able to take it with marked benefit, and without the inconveniences which so often follow beer and porter when purchased retail.

A large number of patients, especially among those who have been in India and other warm climates, have their digestive organs more or less impaired. The stomach may have been over-taxed by the continued use of highly-flavoured dishes, or of wine and spirits. And here it may be noted that the latter are very much more readily absorbed in warm weather. If taken during the time that digestion is not going on, all that is taken up by the blood necessarily passes through the liver, so that a person drinking, as he conceives, moderately in a hot climate on an empty stomach, may have his liver affected long before he is aware of his danger. The best tonic in these cases is probably the nitro-muriatic acid, given internally shortly before meals, or applied to the skin in the way recommended by the late Sir Ranald Martin. In such cases, where patients do not object to their use, suppositories, containing ten grains of blue pill, will often be very useful. In consequence of the peculiar economy of the portal system of veins, the action of the medicine in this way is directed to the liver, while the other organs of the body are not directly affected by it. Administered in this way, mercury may be given internally at the same time that the mineral acids are used.

The iodide of potassium is very frequently used for every form of syphilitic affections. From three to five grains are generally given in solution three times a day. This medicine certainly has a great power in removing syphilitic eruptions, and other forms of secondary and tertiary syphilis; but it does not, according to my experience, cure the disease. The symptoms disappear, the surgeon and the patient often congratulate themselves on the result, but within a few weeks the eruption appears again in the same, or in a somewhat different, form.

The iodide of potassium removes many symptoms more quickly than any other medicine. It is wonderfully efficacious in relieving nocturnal pain in the bones, and may be used in combination with mercury in most cases. If long continued, it produces a peculiar depression of the general system, and patients often, after long courses, complain of want of power, especially in the organs of generation. It cannot, according to my experience, be relied upon in the same way as mercury can for the permanent removal of the manifestations of the secondary or so-called tertiary forms of syphilis. It often appears to remove the symptoms for a time, but it does not cure the disease. This I have observed in a very large number of cases, and it has been told me by many patients, whose usual expression is that they have taken it by "bucketfuls."

Iodide of mercury is a very favourite medicine with many continental surgeons; a grain may be made into a pill and given once, twice, or three times a day, and this dose may be gradually increased.

Mercury given in this form is more easily eliminated from the system than when given alone, and it also produces a more visible and decided effect upon the patient's system.

Iodide of potassium, or iodide of sodium, may be given internally, while the mercury is administered through the skin. These medicines probably then unite in the system, and produce much the same effect as if the iodide of mercury were given. This mode of giving the iodide of mercury has, however, the great advantage of saving the digestive organs and the liver from any irritation from the mercury.

The biniodide of mercury is much used by some medical men; others prefer the bichloride. Lately the bromides have been used by some practitioners, and probably they depress a patient's system less than the iodides. All these medicines may be very useful in particular cases, or as adjuvants to other modes of treatment, or in order to remove particular symptoms, but they cannot, in my opinion, be relied upon to cure the disease.

Sarsaparilla, useful in some forms of the second stage of lues venerea, has very little, if any, influence over the eruptions on the skin. Mr. Blomfield, formerly surgeon to the Lock Hospital, in his practical observations, says—"I solemnly declare I never saw a single instance in my life where it cured the disorder without the assistance of mercury." Mr. Pearson's observations led him to the same conclusion. We are, therefore, led to believe, although sarsaparilla is often given, even at the present day, for papular, tubercular, and scaly eruptions on the skin, that these affections, when they appear to have been benefited by that medicine, have in reality either in their natural course undergone a change for the better, or have been relieved by other medicines given at the same time.

One source, and a very common one, observes Mr. Pearson, to which some of the mistakes committed upon this subject may be traced, is a persuasion that every morbid alteration, which arises in an infected person, is actually tainted with the venereal virus, and ought to be ascribed to it as its real cause.

Every experienced surgeon must, however, be aware that very little truth or reality exists in a representation of this kind. The contagious matter and the mineral specific may jointly produce in certain habits of body a new series of symptoms, which, strictly speaking, are not venereal, which cannot be cured by mercury, and which sometimes are more to be dreaded than the simple and natural effects of the venereal virus. Some of the most formidable of these appearances may be sometimes removed by sarsaparilla, the venereal virus still remaining in the system; and when the force of that poison has been completely subdued by mercury, the same vegetable is also capable of freeing the patient from what may be called the sequelæ of a mercurial course.

In obstinate cases very large doses of the iodide of potassium are often given, as much as ten, or fifteen, or thirty grains three times a day; but it is doubtful whether these doses possess any advantage over the smaller ones.

Guaiacum, in the form of decoction, was supposed, during two centuries, to possess anti-venereal properties, and Hunter certainly has some faith in its efficacy. Mr. Pearson also states that its reputation was supported by well-attested narratives, in a great number of instances, where no mercury had been employed, or where that medicine had done no permanent good, or where the patients had suffered injury from it instead of finding advantage.

After a careful investigation of the properties of guaiacum, the following are Mr. Pearson's conclusions with regard to it:—The decoction commonly excites a grateful sensation of warmth in the stomach; it gives a sense of dryness to the mouth, and creates thirst; it also increases the natural temperature of the skin, and renders the pulse more frequent. If the patient drink the decoction warm and lie in bed, it generally proves moderately sudorific; and this effect may be heightened as much as we please, by employing the hot bath, the vapour bath, antimonials combined with opium, or the pulvis ipecacuanhæ compositus. When the decoction has been continued during ten or twelve days, in the quantity of four pints each day, the patient often complains of its producing the heartburn, accompanied with flatulence; and he is usually costive during the whole course. If the person expose himself freely to the air while he is taking this medicine, the secretion of urine will be augmented, but no sensible alteration will take place in the state of the skin.

Mr. Pearson says:—"When I have exhibited the decoction of guaiacum in pains of the bones, as they are called, confining the patient at the same time to bed, and enjoining a diet consisting of fluids only, I have rarely seen any beneficial consequences result from the use of it, except where it acted as a sudorific; and in this respect I think its qualities manifestly inferior to antimony or volatile alkali. In several instances, after persisting in a course of it during four or five weeks, I have not gained any material advantage; and I have remarked, that when the dolores ostocopi were not connected with some morbid alteration of the structure of a part, this medicine was of little avail. When the strength and vigour has been reduced by a successful mercurial course, with confinement to the house, and where a thickened state of the ligaments or of the periosteum remains, or where there are foul indolent ulcers, these sores will often heal, and the enlarged membranes will subside, during the administration of this decoction.

"The decoction of guaiacum will often suspend the progress of certain secondary symptoms of lues venerea for a short time, such as ulcers of the tonsils, venereal eruptions, and even nodes, but I never saw one single instance in which the powers of this medicine eradicated the venereal virus. It has been recommended by many people to combine guaiacum with mercury, with the intention of improving the specific powers, and of counteracting the injurious effects, of that mineral; the advantages to be derived from this compound mode of treatment are by no means well established, for guaiacum is certainly no antidote against syphilis."

Mr. Pearson's opinion with regard to the virtues of sarsaparilla, founded, as it was, upon a very large experience and a great number of experiments, is perhaps as valuable and correct as can be obtained.

"While I reject it," he says, "as a specific, I would by no means disparage it as a medicine possessing no valuable qualities. In those cases where the malignant powers of the virus have proved materially prejudicial to the health, so that the patient cannot enter upon the use of mercury with propriety, the decoction and powder of sarsaparilla will often retard the destructive agency of the venereal poison and repair the breaches made in the constitution; it may be sometimes given with advantage during a course of mercurial frictions, when it does not occasion a determination to the bowels, and it will almost invariably remove many of the most troublesome sequelæ of a course of mercury.

"Nor are the salutary properties of the sarsaparilla-root useful in those diseases only that are either immediately or remotely connected with syphilis; its beneficial effects are often demonstrated in the treatment of foul, untractable, spreading sores, in more than one form of scrofula."

In all diseases characterised by want of power, Mr. Pearson agrees with Hunter that bark may be advantageously employed, and it may often be most beneficially used in cases of syphilitic eruption, where, either from some constitutional peculiarity, or from the long continuance of the disease, or from the debilitating effects of the remedies employed, a want of power is manifested in a patient's system. It may conveniently be given during a mercurial course, or after the mercury has been discontinued. The beneficial effects of bark are, however, most manifest in cases where destructive ulceration or sloughing occurs.

Opium is, next to mercury and the iodide of potassium, perhaps the most useful remedy in the treatment of venereal diseases, and with regard to it Mr. Pearson's opinion may again be taken. He says: "An experience of nearly twenty years has taught me that, when it is combined with mercury, the proper efficacy of the latter is not in any measure increased; and that it would not be safe to rely upon a smaller quantity of the mineral specific, nor to contract the mercurial course within a shorter limit, than where no opium has been employed.

"This representation will not, I presume, admit of controversy; yet we frequently hear people expressing themselves upon this head as if opium manifested some peculiar qualities, in venereal complaints, of a distinct nature from its well-known narcotic properties, and thus afforded an important aid to mercury in the removal of lues venerea. Perhaps it may not be unuseful to disentangle this subject from the perplexity in which such indefinite language necessarily involves it.

"Opium, when given in conjunction with mercury, by diminishing the sensibility of the stomach and bowels, prevents many of those inconveniences which this mineral is apt to excite in the primæ viæ, and thus its admission into the general system is facilitated. Mercury will likewise often produce a morbid irritability, accompanied with restlessness and insomnolescence; and it sometimes renders venereal sores painful and disposed to spread. These accidental evils, not necessarily connected with venereal disease, may be commonly alleviated, and often entirely removed, by a judicious administration of opium; and the patient will consequently be enabled to persist in using the mineral specific. It must, however, be perfectly obvious that opium, in conferring this sort of relief, communicates no additional virtues to mercury; and that in reality it assists the constitution of the patient, not the operation of the medicine with which it is combined.

"The salutary effects of mercury as an antidote may be diminished or lost by the supervention of vomiting, dysentery, etc. Opium will often correct these morbid appearances, and so will spices, wine, an appropriate diet, etc.; yet it would be a strange use of words to urge, wherever these articles of food were beneficial to a venereal patient, that they concurred in augmenting the medicinal virtues of mercury. It may be supposed that the majority of medical men would understand by the terms, "to assist a medicine in curing a contagious disease," that the drug conjoined with the specific actually increased its medicinal efficacy, whereas, in the instances before us, it is the human body only which has been aided to resist the operation of certain noxious powers, which would render a perseverance in the antidote prejudicial or impossible.

"The soothing qualities of this admirable medicine can scarcely be estimated too highly, yet we must beware of ascribing effects to them which have no existence, since a confidence in the anti-venereal virtues of opium would be a source of greater mischief than its most valuable properties would be able to compensate."

LECTURE VII.

LOCAL SUPPURATING VENEREAL SORE—SYPHILISATION—LYMPHATIC ABSORPTION — PHYSIOLOGICAL ABSORPTION—TWOFOLD INOCULATION.

THE *local suppurating venereal sore* has never been known, so far as I am aware from personal observation, to infect a patient's constitution so as to produce secondary symptoms. It commences as a pustule, and runs a definite course. When artificially inoculated, the inoculated point becomes red within the first twenty-four hours. From the second to the third day it becomes slightly raised, and is surrounded by a red areola. Between the third and the fourth day it contains a fluid more or less turbid. From the fourth to the fifth day the pustule becomes fully formed, and from this time to the termination of the disease the secretion consists of well-formed pus. Sooner or later the cuticle covering the pustule is detached, and in some instances it may be removed, at the time of the inoculation, whether artificial or natural. This alters the appearance of the affection, but in nowise interferes with its essential characters. As soon as suppuration commences there is a loss of substance in the part, and an ulcer forms, which has peculiar characters. When not interfered with by any accidental causes, it increases equally in every direction, so as to form a more or less perfect circle. The edges of the ulcer are cleanly cut, and present a sharp outline. The appearance presented is often that of a piece of skin having been removed by a punch. The edges of the ulcer are frequently slightly undermined and everted. The surface of the ulcer is irregular, sometimes presenting granulations, at other times presenting the appearance of having been worm-eaten. Often the bottom of the ulcer is covered by an adherent, greyish, tough matter, which probably is a part of the natural texture, which has undergone a kind of molecular necrosis, and is in process of being separated from the subjacent living parts.

Suppuration in itself does not necessarily involve a loss of substance, but these suppurating sores nevertheless often leave permanent and depressed scars. This evidence of loss of substance is probably in exact proportion to the degree in which the form of molecular necrosis before alluded to has been present in any individual case. The suppurating syphilitic sore gradually increases during a certain period, then remains stationary, and finally heals. This latter process is indicated by the base of the sore becoming clean and covered by red granulations, by the red areola which surrounded it becoming fainter, and by the edges of the wound gradually losing their prominence.

Such is a description of the typical form of chancre; but this may be modified by various accidental causes, of which the following are some of the most important:—

1. If the specific pustule be destroyed by the appli-

cation of caustic within the first five days of its existence a simple ulcer alone will remain. This will then have none of the characters of the specific disease.

2. When a chancre during its progress meets with tissues of different natures, or when folds of the same texture are involved, its shape and appearance may be thereby modified.

3. Should the specific inflammation extend to the areolar tissue, a certain amount of inflammatory exudation will take place. This will produce an induration at the base of the chancre, which will sometimes very much resemble the induration which generally accompanies the infecting chancre. The induration which surrounds the suppurating form of the disease is generally characterised by gradually fading towards the circumference to the consistency of the surrounding parts. When this inflammatory exudation, however, in its progress meets with a different kind of tissue, it may terminate quite abruptly, and then it may be impossible to distinguish by the touch alone this kind of induration from that of the chancre which infects a patient's constitution. The character of the secretion of the sore, its inoculability on the same patient, the history of the case, and the condition of the inguinal glands, must then be relied upon to distinguish the disease.

This description of the suppurating sore, derived from the experiments of Ricord and his followers, was for many years supposed to apply to syphilitic sores in general, but, as has been demonstrated in previous Lectures, it does not apply to the form of disease which infects a patient's constitution. The infecting form of syphilis begins, as we have seen, in uncomplicated cases, with some adhesive form of inflammation, such as a papule, a tubercle, or an abrasion with a thickened base. This disease, characterised by the specific adhesive inflammation, cannot be re-inoculated upon the patient so as to produce the same kind of action. It has a prolonged period of incubation. It cannot be destroyed by caustic, is very certainly followed by constitutional disease, and when it heals leaves no loss of substance. The suppurating sore, on the contrary, always commences with a pustule. It can always be inoculated upon the patient, so as to reproduce the same action. It may be completely destroyed by caustic so as to leave an ordinary sore only. It is not followed by any constitutional disease, and it leaves a depressed cicatrix.

I have here a drawing of a case in which I performed a series of inoculations from a suppurating gland in the groin. The defined outline and loss of substance in each inoculation is well represented. These inoculations all healed without any treatment. The patient remained under my observation for two years, and had no syphilitic symptoms.

A second drawing represents a natural inoculation. A boy, about seven years old, had the operation of phimosis performed, and in some way or other the cut surface became poisoned. The sore assumed a phagedænic character. In the treatment of this the penis was kept up in contact with the abdomen, and the skin there became inoculated. The drawing by Dr. Westmacott shows well the defined outline of the ulceration and the loss of substance. This patient had no enlarged glands in the groin, and no syphilitic symptoms.

In depressed states of the constitution a local venereal sore may become extremely troublesome, assuming different forms of phagedænic, serpiginous, and other unhealthy kinds of inflammation. Such instances generally occur in patients whose systems have been undermined by intemperance or by previous syphilitic disease.

The treatment of the local venereal suppurating sore, in its uncomplicated form, is sufficiently simple. The venereal poison requires a living nidus for its development, and even in the suppurate form of the disease some time must elapse before its specific action is established.

If, within the first five days of the application of the poison, the part to which it has been applied be destroyed by caustic, the death of that part will determine the cessation of the morbid action. This cauterisation, to be effective, must, however, extend to all the tissues implicated. It can, therefore, only be practised with success within a very few days of the appearance of the chancre. If a longer time be allowed to elapse, the tissues will have so imbibed the poison that it will be in vain to attempt to destroy all the parts that have been affected.

Suppurating sores generally make their appearance soon after upon the application of the virus, and to these, therefore, alone, the method of treatment by cauterisation is adapted. For the purpose of securing the intended result, strong caustics should be used;

and as these may sometimes extend further than is intended, it is always advisable, before applying the caustic, to have an antidote at hand, so as to limit its action when desirable. When the caustic has produced its requisite action, the antidote may be applied; this will have the effect of preventing the further extension of the caustic, and also relieve the pain to which it gives rise. Thus, if a strong acid be used, a solution of carbonate of potash or chalk will form a good antidote. If an alkaline caustic be employed, some vinegar may very conveniently be used to limit its action. When nitrate of silver is applied, the common olive oil is the best subsequent application.

The caustics most used for the purpose of destroying the suppurating venereal sores are the mineral acids, or a combination of potash and lime. The nitrate of silver will seldom extend sufficiently deep to destroy the poison.

The strong nitric acid has often been employed, and acts extremely well, but it gives very considerable pain when applied to the surface of the body.

Another preparation, which has been very much used, is a combination of sulphuric acid and powdered vegetable charcoal. When this preparation, in the form of a paste, is applied to a chancre, it dries quickly, and forms a kind of black crust, which remains adherent to the tissues, combines with them, and is not detached for several days. The wound sometimes will then be found to have lost its specific qualities, and to be in a healing condition. The application of this caustic causes very severe pain, which lasts for a considerable time. The pain, however, is said to be less than that produced by the nitric acid, but then it does not admit of being relieved in the same way by the application of an antidote.

Perhaps the most convenient form of caustic is the potassa cum calce, as prepared in the shape of little rods for the purpose. The lime combines with the moisture of the parts and prevents this from extending itself over the neighbouring surface. The extent to which this caustic acts may therefore be regulated in the most accurate manner; and after it has done its duty the application of some dilute acid will relieve the pain which it has caused.

The actual cautery is a remedy which has often been successfully used for the phagedænic form of ulceration. The object with this, as with the other kinds of caustic, is to destroy the whole of the infected tissue, and *completely* to kill every part to which the cauterising action extends. For this purpose the cautery should be heated to a white heat, and allowed to remain on the diseased part sufficiently long to destroy the tissues to the requisite depth. Phagedænic sores, treated in this way, have been known subsequently to present a healthy surface, and to heal without further trouble.

Serpiginous sores are often too extensive to be conveniently treated in this way. A modification of the plan may then be adopted. The outer edge of the sore may be alone destroyed, so that the diseased part may be completely surrounded by an artificial line of demarcation. This will sometimes prevent the extension of the affection. It will often happen that the edges of serpiginous sores are undermined, and if the cautery be then applied to the edges alone of the skin, it may not reach to the circumference of the disease. It is safe, under such circumstances, to destroy the skin deeply two or three lines from its detached margin.

The ordinary suppurating venereal sore, if not in its origin destroyed by caustic, will generally run its course of five or six weeks' duration, and heal of its own accord, without leaving any injurious effects either in the lymphatic or in the patient's general system.

It may be well, however, to use various means to accelerate the healing of a suppurating sore, and such means are sometimes necessary.

So long as the sore has the specific characters of ulcerating deeply, with clearly defined vertical edges, it is well to continue the use of some mild caustic, such as a solution of nitrate of silver. When granulations spring up and the base appears healthy, it matters little what applications be used, provided the part be kept scrupulously clean.

The ulcer may assume the characters and appearances of ordinary lesions elsewhere situated; *e. g.*, it may be indolent, irritable, or inflamed, or, by granulating too redundantly, impede the cicatrisation. Such symptoms are to be met by the same measures as would ordinarily be used.

If a chancre threatens to slough it is best to dry the parts and apply nitric acid, afterwards using a lotion of potassio-tartrate of iron.

With a solution of that salt applied to the sore, and the administration of the same drug internally, the phagedænic action will almost always alter its character.

Sometimes a large amount of inflammation, with great pain, attends the local progress of the disease. In such cases the administration of opium is of great advantage.

Syphilisation was at first performed with the secretion from the local suppurating sore, on account of the facility with which that could be inoculated, and the difficulty which was experienced in inoculating the secretion of sores affected by the specific adhesive inflammation.

Danielssen used syphilisation as a means of treatment in lepers not affected with syphilis; and the experience thus obtained is conclusive, on the one hand, that no absorption of the virus took place in his cases; and, on the other hand, that the secretion used was not derived from a real syphilitic source. He gives the history of six cases, and with reference to them, says:—

"It appears from the above details, that neither one chancre, nor two, nor three, nor six, nor thirty-six, nor one hundred and thirty-six, have in the preceding cases induced secondary syphilis, and that, therefore, the direct operation of the inoculations has been exclusively limited to the spot where the chancres showed themselves. If such be the case, we are justified in assuming that no greater number of chancres will produce a different result. And this is confirmed by our experience; for, with one exception, to which we shall subsequently allude, not one of those individuals, previously free from all syphilitic taint, whom I have syphilised, have been affected by secondary syphilis; nor have they shown any signs of the existence of the venereal diathesis in their systems. Nor, in those already affected with syphilis, have I observed under syphilisation the slightest evidence of their having imbibed the poison afresh. So far from seeing in syphilisation a new physiological fact, as Boeck denominates it, I have, on the contrary, found it confirm a long-established axiom, viz., that the simple soft chancre does not affect the system, and consequently does not produce constitutional syphilis. Among the many thousand artificial chancres that I have seen, I have not observed one (with a single exception) which was not of this character, both in my own practice and in that of my colleagues, and as inoculated on every part of the body. Even on the face, the soft chancre followed inoculation, contrary to Ricord's experience, who had always observed the indurated chancre there.

"The exceptional case referred to in the above remarks is highly important, since it strongly confirms the position here assumed. Syphilisation had been performed upon a leper with the virus of the soft chancre to the extent of nearly four hundred inoculations, when the secretion of an indurated chancre was accidentally inoculated. The inoculated point healed, but *a month afterwards an indurated sore appeared, followed by unmistakable signs of secondary syphilis,* showing that the previous inoculations with the chancroidal virus, which had been strictly local in their action, had afforded no protection whatever against true syphilis."

The mode of inoculating, with any degree of certainty, the secretion of an indurated sore upon the patient himself, or upon another syphilitic patient, was, I believe, first pointed out by myself in an article in the *British and Foreign Quarterly Review* for April 1859.

"Having observed," I there state, "that the secretion from an indurated sore was inoculable under certain states of irritation, blisters were applied to some of these indurated sores, and subsequently they were dressed with the *unguentum sabinæ.* By these means I obtained a free secretion of pus, and it was found that the secretion, before incapable of producing any effect upon the patients themselves, could now be inoculated. The results of these inoculations have been different from those which follow ordinary inoculations from suppurating sores." In some cases I obtained an abortive form of adhesive inflammation in which there was no well-defined outline, and which did not suppurate or ulcerate. In other cases, after a certain amount of adhesive inflammation had taken place, suppuration and ulceration occurred; but unless there was some amount of phagedænic action produced, no loss of substance followed. The suppuration and ulceration was confined to the newly-formed matter, and did not invade the natural structures. The drawing now shown, taken from a patient who was inoculated with her own vaginal secretion, with great care, by Mr. Gascoyen, shows the character of the inoculation derived from a syphilitic source, in contrast to the appearances in the last drawing, where a series of inoculations were made from a suppurating sore. The amount of solid matter, when the matter inoculated is derived from an indurated sore, or a constitutionally syphilitic source, is greater, and the suppuration is not so soon or so decidedly established. It is, in fact, a modified form of the adhesive inflammation, the products of which rapidly degenerate, and tend to pass from their want of vitality into suppuration or ulceration; and if the action be confined to the newly-formed tissue, there is, as in the primary indurated sore, no permanent loss of substance.

The Case (XLII.) last referred to was that of Sarah Colt, seventeen, who was admitted into the Lock Hospital on the 15th of October 1874. She was then infected for the first time. There was a superficial sore, with induration at the inferior commissure, ulcerated mucous tubercles of the vulva and perineum, profuse purulent discharge from the vagina, and general roseola.

On the 16th she was inoculated on both thighs, from the discharge taken high up in the vagina, through a speculum. There was no abrasion in the vagina, nor any sign of disease there, with the exception of the discharge.

On the 23d the inoculations, as represented, having succeeded, she was herself re-inoculated, and other patients were inoculated from the same source. In the other patients the sores which resulted were more inflamed and larger than in the patient herself.

The adhesive action which follows inoculations in a syphilitic patient again is not the same as that which occurs in the primary syphilitic sore. It diffuses itself gradually into the surrounding tissues; it does not terminate abruptly; it is accompanied by no affection of the lymphatic vessels, and is, in fact, the same as a suppurating or ulcerating tubercle, produced by what Hunter would consider the local action of the poison in the natural course of the disease.

After the publication of my paper in 1859, many series of inoculations were made with the secretions from indurated sores, and it was found that the secretions could be obtained for this purpose by several means. If, for instance, an indurated sore was allowed to scab over, some matter would form underneath the scab, which would answer the purpose, and the same thing would occur during particular phases of the original disease without any artificial local irritation.

As an eruption takes place on the skin of a patient, when what I have called the syphilitic fever first manifests itself, it is to be expected that the secretion from a primary syphilitic sore would be more active at this particular period, and that this would be the most favourable time for the inoculation of syphilitic blood, the secretions from a primary chancre, from secondary eruptions, or from mucous surfaces.

It is highly probable, however, that in a vast number of cases treated by so-called syphilisation, the products of different kinds of venereal sores have become mixed together, and that a mixed local action been thus obtained.

Now, by a repetition of such inoculations, we may as it were anticipate the natural evolution or recurrence of the disease, but we cannot produce any reinfection of a patient's system.

If, then, neither the suppurating venereal sore nor the primary nor the secondary syphilitic affections can be artificially inoculated, so as to produce any constitutional effect, it is scarcely reasonable to suppose that any constitutional disease can be cured by either of these means. By a kind of counter-irritation the disease may perhaps be prevented from attacking internal parts, or the repeated syphilitic irritation upon the skin may tend to wear the disease out, but the mode of treatment can have no specific effect upon a patient's constitution.

The cases upon which Dr. Boeck tried syphilisation, on his visit to England, were certainly not instances from which a fair conclusion as to the mode of treatment could be drawn. But this much may be said, that in those cases it did not arrest the progress of the disease, for out of nineteen cases which he undertook to treat himself four died, and another fatal case was afterwards recorded by Dr. Dunn.

The subject of *Lymphatic absorption* demands a separate consideration, on account of the means which it affords of diagnosis, the indication which it may afford of the persistence of disease, and its general physiological interest.

We have seen that the secretion of a primary sore is inoculable, so as to produce the specific induration only during its earliest stages; and it is during this same period that the action takes place which produces the specific affection of the lymphatic vessels. Any subsequent modification of syphilitic inoculation does not produce this effect. If any irritation of the absorbent glands is produced by subsequent modified syphilitic disease, the action in the lymphatic glands will be modified also, and will be of a different nature to that first produced.

As the condition of the glands, which I have termed amygdaloid, arise from the direct absorption of the poison; as they appear at the same time, and only at the time, that a patient might be artificially re-inoculated so as to produce an indurated sore; as they are the result of the same kind of action, namely, a specific adhesive form of inflammation; we may conclude that nature performs in them the same kind of operation as if the poison were taken artificially from an indurated sore on a grooved needle, and artificially inserted into substance of one or more of those absorbent glands.

In the statement which I have made in previous Lectures, viz., that the inguinal glands do not suppurate, in consequence of the absorption of real syphilitic poison, I would confine myself to the disease as it is observed in uncomplicated cases. Absorption of any other matter in a syphilitic person is quite as liable to produce suppuration, and perhaps more so, than in a person who was not syphilitic; or, when the syphilitic fever or diathesis has worn itself out, a modified form of the syphilitic re-infection, accompanied by local irritation, is very likely to produce suppuration in the inguinal glands, as it may in the primary sore. But the inoculations of matter from syphilitic sores, artificially or naturally irritated, do not, as a rule, affect the corresponding inguinal glands in any way.

The specific adhesive inflammation of the inguinal glands is strictly limited to those which Hunter called "first in order;" that is to say, those glands which directly receive the lymphatic vessels coming from the original lesion. This specific action cannot be traced in the lymphatic system beyond this point, and the contents of those glands is not again re-inoculable, so as to produce the same disease.

It will sometimes happen that the structure of an inguinal gland is destroyed, and then the products of that destructive action may be absorbed by other vessels, but the result in them is of an entirely different nature to that which is characteristic of the syphilitic disease. In a case under my own care an extensive slough formed in the groin, involving the inguinal glands; the patient died, and on a post-mortem examination the lumbar glands were found affected. They contained a dark-coloured fluid resembling a mixture of decomposed blood and pus. The affection of these lymphatics evidently resulted from matter taken up from the slough in the groin by independent vessels, and not from any fluid that had passed through the inguinal glands. It would then appear probable from this that the syphilitic virus, as such, never gets beyond the first system of lymphatic glands with which it comes in contact, but that the products of its action in them, and in the primary sore, if taken into the patient's system at all, is absorbed by the blood which circulates through these parts respectively.

The amygdaloid affection of the inguinal glands is essentially a chronic disease. It remains long after the inoculation of the primary sore has disappeared, and is often the only evidence of a patient having had, or still having, syphilis. The affection probably always exists, but it is not always to be demonstrated.

In certain cases, especially in women, some of the deeper glands, not situated in the groin, may be affected, and then their existence cannot be detected by the touch. They are, however, very generally present in those who are syphilitic.

The condition of the inguinal glands, which I have called amygdaloid, is a very important, and, I would say, the most characteristic symptom in the first manifestations of constitutional syphilis. The condition is peculiar, and belongs to no other affection. It is true that occasionally, for a time, the inguinal glands may be enlarged from other causes, so as to give the same sensation to the touch. At other times the enlargement of the inguinal glands may be comparatively slightly developed, and this is also occasionally the case where there is much induration either at the original point of infection, or in the lymphatic vessels leading from it to the inguinal glands. Still, as a rule, the inguinal glands become enlarged in the peculiar manner which I have described, when syphilis is contracted in the usual way; and remain so enlarged, more or less, as long as the patient remains subject to a recurrence of syphilitic symptoms.

On examining the inguinal glands at any one period a surgeon might, from accidental circumstances, be deceived as to their nature; but if their origin and progress is watched, they afford, as I believe, a correct indication of the condition of the patient's constitution as regards syphilitic disease; and I believe that no patient can be said to be free from syphilis, or fit to marry, as long as they remain.

From the observation of a large number of cases in the regiment of Guards, to which he is attached, Mr. Venning has come to the conclusion that the peculiar condition of the inguinal glands to which I allude is always present when syphilis is contracted in the usual way; that they remain permanently enlarged in patients who have been thus affected; and that this peculiar enlargement occurs from no other cause. Now, it must be considered that soldiers in the Guards are generally healthy men. Under proper treatment they soon throw off the manifestations of syphilis, and they are not much subject to diseases which would produce enlarged glands from other causes. In private practice the proportion of cases in which the inguinal glands are enlarged from other sources is much greater, and consequently instances more frequently occur in which the diagnosis may be rendered difficult. The number of cases in which the inguinal glands are enlarged from some strumous affection are, for example, much greater in patients as they present themselves in general practice, than in a regiment of healthy men. The question whether these glands subside to their natural condition, after a person has had syphilis, is of still more importance. It has been said that they do not; and if so, their presence or otherwise would be an indication of a person having previously been infected or not. I have lately paid particular attention to this point, and I have examined a number of patients in whom I had noted the existence of the enlarged inguinal glands formerly in connection with constitutional syphilis, and in whom, upon a more recent examination, these glands presented nothing peculiar, and nothing which might not be found in a perfectly healthy person. The rule, however, is the other way, and, in spite of treatment, the amygdaloid glands remain; and, as long as they remain, the patient, when from any cause he gets out of health, will be subject to a recurrence of some syphilitic manifestation. In the upper classes of society patients are often much more anxious to get completely cured before they settle in life, than in the lower, and they will for that purpose undergo a prolonged treatment; and, under these circumstances, the specific enlargement of the inguinal glands will more frequently disappear.

As long as a patient is syphilitic, and I take the presence of the amygdaloid glands as the best indication of this condition, so long will he be incapable of being re-infected with constitutional syphilis. If, after their disappearance, the patient be re-infected, the disease will then go through all its stages in a mild and modified manner (see Case XXXIV).

In cases of re-infection the specific enlargement of the inguinal glands will not be so well marked, and the outline will not be so well defined as in a first disease. The surrounding cellular tissue is likely to be implicated, and, in a certain number of instances, suppuration will occur. The secondary symptoms will be mild, yielding to a comparatively mild treatment, but perfectly characteristic.

If, then, it be true that a patient may recover from a first attack of constitutional syphilis, and be subsequently re-infected, it is important to have an indication of this condition, and there is no one symptom that can so surely be relied upon for this purpose as the state of the inguinal glands. If these glands have become enlarged in the manner previously described, *at the time the patient contracts syphilis,* and if they remain enlarged, as they very often indeed do, then the patient is still syphilitic, and cannot be re-infected. If, on the contrary, the enlargement has disappeared, as I am satisfied it has done, in a number of well-marked cases, then the patient may again be subject to the constitutional form of the disease. In any given case I would not, however, be guided exclusively by one indication. There are instances in which the affection of the inguinal glands is imperfectly developed; there are other cases in which they are enlarged from other causes, and probably (especially in fat people) they may be enlarged when they cannot be felt to be so. Allowances must be made in individual cases for peculiar circumstances, but the general rule is, I believe after mature consideration, that which I have mentioned.

No fact can be established in pathology, any more than in physics, which has not a direct bearing upon other facts. When Galvani saw that the contact of a piece of metal caused a contraction in the muscle of a frog, the fact thus ascertained soon became associated with a vast number of other facts, by means of which much of the business of the world is now carried on; and if I may for a moment compare small things with great, I would say that the fact of a patient not being liable to be re-infected with syphilis until the first infection had passed away, has also some important bearings. If a patient is really not susceptible of any fresh constitutional disease while the first disease is either latent or manifest in his system, what can we say to the inoculations performed upon syphilitic patients under the name of syphilisation, but that they are only so many local points of irritation produced upon the patient's skin, without in any way affecting his constitution, as far as the syphilitic poison is concerned. If, in the natural processes by which syphilis is developed, we see that, both in its first attack and subsequently when a patient is re-infected, a process takes place characterised by a peculiar form of induration either at the original point of inoculation, in the lymphatic vessels, or in the corresponding absorbent glands, and that such an action does not take place in re-inoculating a syphilitic patient, as it assuredly does not, then we must conclude that other affections may be produced, but not such as originate or accompany syphilitic infection.

I have reserved the subject of re-infection of syphilis in connection with syphilisation, to this Lecture, because they derive their best illustrations and explanations from the condition of the absorbent glands.

Re-inoculation of the syphilitic poison on a syphilitic subject then, as distinguished from re-infection, produces either some abortive form of adhesive inflammation, or an effusion of new material which tends to degenerate into pus. The so-called pustules thus produced consist chiefly of solid matter. The adhesive inflammation in ordinary cases preponderates, and we have raised tubercles with softened lymph more or less completely converted into pus in their centre. In the inoculation of the secretion from a local suppurating sore, on the other hand, it is the suppurative inflammation which preponderates, and there is only sufficient solid matter effused to limit and circumscribe the suppurative action.

These observations have, as I believe, a direct bearing upon the experiments made in the treatment of patients by syphilisation. If the matter employed be taken from a simple suppurating sore, the inoculated point will suppurate at once, and will subsequently ulcerate. If the secretion be taken from a syphilitic patient and any result is produced, the adhesive inflammation will precede the suppurative, and there will generally be no loss of substance in the part. In neither instance can there be any re-infection of the patient's constitution. The adhesive inflammation which precedes the suppuration in cases of the inoculation of syphilitic matter on syphilitic patients, differs therefore essentially from the adhesive action which marks the first or the second infection of a patient's constitution.

In the former there is a thickening of the parts, which gradually diffuses itself in the surrounding tissue, and has very much the character of that produced in an ordinary boil. In the latter, as Hunter has so well described, the thickening terminates abruptly, and it may be of the adhesive character alone, without any suppuration or any ulceration. These characteristics of the two forms of disease, or, I would say, of the two different diseases, are still better illustrated by the affections of the lymphatic vessels and of the absorbent glands in constitutional and in local syphilis.

In constitutional syphilis the adhesive action may affect any part of a lymphatic vessel through which the poison passes, long before there is any general manifestation of the disease. The lymphatic vessel may become thickened in the part affected to several times its natural diameter. The thickening will be accurately limited to the vessel itself, and will not affect the surrounding areolar tissue. It will be of the adhesive kind, and this will never, except from accidental circumstances, pass into the suppurative or ulcerative. The affected lymphatic vessel will afford to the touch the sensation of a piece of whipcord under the skin, which may be rolled freely over it. The skin itself may present a red blush, indicating the course of the lymphatic vessel, but it will rarely become influenced in any other way. When a lymphatic vessel becomes thus affected, there will be less specific induration at the original seat of inoculation, and also in the corresponding absorbent glands.

In considering the condition of the lymphatic vessels and glands as an indication of syphilis, it must be allowed that the glands in the groin, as in every other part of the body, may become enlarged, and may occasionally remain enlarged from many different circumstances. Generally speaking, the enlargement of the lymphatic glands from non-specific affections have all their own characteristics; but sometimes the enlargement from specific disease cannot, by the touch or appearance alone, be distinguished from those which originate and persist from other causes. I have seen many cases in which I should not have been able to distinguish them. If, therefore, I were asked to give a definition of the amygdaloid condition of the inguinal glands as a means of diagnosis, I would say that if the glands became enlarged shortly after the patient had contracted syphilis, and remained as separate hard distinct kernels, not involving the surrounding areolar tissue, that then their existence would be a sign of the patient being syphilitic.

As long as the specific induration of these inguinal glands remains, so long, in my opinion, will the patient be liable to some return of the disease. If in good health years may elapse without any indication of its existence; but should the patient get out of condition from an accident, from a fever, from high or low living, or from any other cause, some manifestation of the disease may then again appear. My experience would, however, lead me to believe that the induration of the inguinal glands, like every other symptom of syphilis, may be completely removed, and then the patient may contract the disease again; the inguinal glands may again become enlarged; and a fresh train of secondary symptoms commence. (See Case XXXIV.) Now, if, as has been stated, the adhesive inflammation of the absorbent glands is a distinctive character of the infecting form of syphilis, it must follow that where no such action takes place there is no infection; and as no such actions take place in the inoculation of syphilitic patients in the so-called process of syphilisation, it also follows that in that process no constitutional syphilitic effect is produced.

In connection with lymphatic absorption, it must be noted that the induration of the lymphatic vessels in syphilis is often in inverse proportion to that of the primary sore. If there be great specific induration at the seat of the primary inoculation, there will be little affection of the lymphatic vessels or of the inguinal glands; or if, on the other hand, there be very slight local induration in the primary sore, there may be much induration either in a lymphatic vessel or in the inguinal glands; or, if there be great induration of a lymphatic vessel, there may be comparatively little in the chancre which has produced it, or in the inguinal glands. It would appear that this essential action must in ordinary cases be developed, and that it may fall indifferently, upon any point with which the poison has originally come in contact, upon a lymphatic vessel as in Case LVIII., or upon the lymphatic glands. Cases do, however, occasionally, although very rarely, occur, in which undoubted syphilis developes itself, and in which no affection of the penis or urethra, or lymphatic vessels or inguinal glands, can be traced.

The opinions of Hunter on the absorption of the syphilitic poison are interesting in a physiological point of view. He demonstrated, as he believed, that the lymphatic vessels were the true absorbents; and he concluded from his discovery that they were the *only* absorbents in the system.

The experiments upon which his idea was founded are very ingenious. Assisted by his brother and several other eminent medical men, he confined some warm milk in a portion of small intestine; and having tied the artery and vein which supplied the intestine, he saw, as he believed, the lacteals of the part presently become filled with the white milk. Upon puncturing the vein upon the distal side of the ligature, it was soon (by pressure of the finger) emptied of its blood. No white fluid could, during the continuance of the operation, be found in the vein. Upon a repetition of the experiment, in which the circulation through the mesenteric vessels was left free, the blood in the vein was carefully examined and compared with that in the neighbouring veins, but it was found not to be light coloured, nor milky, nor could any difference whatever be detected in it. It was found that even by firm pressure, which was continued until the intestine burst, the milky fluid could not be made to pass into the veins.

In another animal, some thin starch, coloured with indigo, was introduced into the small intestine, and the lacteals were soon afterwards seen of a fine blue colour. A vein in this part of the mesentary was opened, and the blood which flowed was allowed to separate into coagulum and serum. The next day the serum had not the least blueish cast.

An injecting pipe was then fixed in an artery of the mesentery, where the intestine was filled with blue starch ; and all communications both in the mesentery and intestine were closed, with the exception of the vein corresponding with the artery. Warm milk was now injected until it returned by the vein. This was continued until all the blood was washed away, and the vein returned a bright white milk. The milk thus circulating through the intestine containing the blue starch was not in any degree changed in colour.

In a third animal, some musk in warm water was confined in a portion of the intestine; after waiting a little time, some of the lacteals of the part were opened with a lancet, and some of the watery fluid which they contained was received into a small spoon. This was thought to smell strongly of musk. Some blood received into a clean spoon from one of the veins of the same part had not the least smell of musk.

From these and similar experiments, Hunter arrived at the inference, which must have appeared one of the greatest discoveries of his age, *that the veins do not absorb in the human body.* It necessarily followed from this that the lymphatics were to be considered as the only absorbents; and this is stated by Hunter to be the fact, in his work on the venereal disease.

If the lymphatics were the only absorbents, they must of necessity have been looked upon as the only channels through which poisons could, under ordinary circumstances, enter the system; and, accordingly, we find Hunter asserting that the venereal matter is taken up by the absorbents of the part in which it is placed, and carried along the absorbent vessels to the common circulation.

This view, deriving as it does such an apparent confirmation from the frequent occurrence of inflammation of the lymphatic glands in venereal diseases, was adopted with more or less modification by almost all the writers on syphilis who followed Hunter.

The accuracy of the experiments upon which Hunter based his theory has, however, justly been doubted by other physiologists; but the theory itself, as regards the syphilitic poison, was, up to a recent date, strange to say, scarcely questioned.

MM. Tiedmann and Gmelin, after mixing various substances, which might easily be detected, with the food of animals, not unfrequently found unequivocal traces of these substances in the venous blood and urine, whilst it was only in a very few instances that traces of them could be discovered in the chyle.

In repeating Hunter's experiments, Mayo found that half an hour after a solution of starch and indigo had been placed in the cavity of the intestine, the lacteals appeared of a clear blue colour; and those present were for a time satisfied that the indigo had been absorbed. But upon placing a sheet of white paper behind the mesentery, it was found that the blue tinge had disappeared. On removing the white paper, the vessels reassumed their blue colour. It became, therefore, evident that the blue tinge was the natural colour of the empty lacteals;—that while they continued to absorb the chyle they were white, but that as soon as they were simply empty they appeared blue.

Thus a repetition of the Hunterian experiments rather tends to prove that the function of the lacteals is limited in the absorption of chyle; and that the lymphatics are not the only absorbents, appear most conclusively demonstrated by the experiments of MM. Magendie and Ségalas. M. Ségalas varied Hunter's experiment in the following manner:—A fold of small intestine was drawn out of a wound in the belly of a dog; all the blood-vessels passing to and from it were tied, with the exception of one artery; a vein punctured upon the mesentery allowed the blood to escape, which would otherwise have stagnated in the part. The lacteal vessels and nerves were left entire. The fold of intestine was then tied at both extremities, and an aqueous solution of the alcoholic extract of nux vomica was poured into it. During the hour which followed, the poison produced no symptoms. The ligatures being then removed from one of the veins, the blood was allowed to return in the natural course of its circulation. In six minutes from this time the poison took effect.

The experiments of M. Magendie, illustrating the same point, are well known.

The thigh of a dog was separated by M. Magendie from the body, by a division of every part, with the exception of the artery and vein; into each of these vessels a quill was introduced, and tied by two ligatures; between these ligatures the vessels were divided, and thus all communication was cut off between the body and the limb, except that which was maintained by the circulation of the blood. Two grains of the upas tieuté were then inserted into a wound in the foot of the separated limb. In about four minutes the poison manifested its effects upon the system.

From these and other facts it appears certain that Hunter's idea of the lymphatics being the only absorbents is incorrect, and we are thence naturally led to the consideration of the value of the theory with regard to the absorption of the syphilitic poison which was based upon that notion.

When lymphatic absorption takes place in connection with a suppurating venereal sore, the action of the poison may be traced in the clearest way along the absorbent vessels. In any part of its course the poison may inoculate the vessel in which it is contained, and may produce a fresh venereal sore, the secretion of which may again be inoculated. It usually happens, however, that the inguinal gland in which the absorbent vessels terminate is the part affected. Here alone, in the great majority of cases, does the poison exercise its influence upon the absorbent system; but that the poison actually passes, as such, through the absorbent vessels, we have abundant proof in the specific effects of the poison in the course of those vessels. Between the lymphatic gland and the primary disease a small abscess will occasionally form. This will present tumid and irritable edges, will afford all the characteristics of a suppurating syphilitic sore, and will furnish an inoculable secretion. We can then distinctly trace the entrance of the venereal poison into the lymphatic vessels, and from them into the absorbent glands in which these vessels terminate. The actual existence of the virus in any part of this course may be demonstrated by experiments, which have been far too often repeated to require any additional confirmation. Arrived at this point of its course, on its way apparently towards the thoracic duct, and from thence to the general circulation, what becomes of it? A very wonderful change is here brought about. The specific virulent poison, which before was liable to contaminate every living part that it came in contact with, cannot be traced beyond this point. The absorbent vessels between the inflamed gland and the thoracic duct do not ulcerate or suppurate; the glands into which they empty themselves do not become enlarged or inflamed. The influence of the poison is here then gone. Beyond the glands first in order, the fluids which the absorbent vessels contain are bland and harmless, incapable of being inoculated, or of infecting any part with which they come in contact. What then has become of the poison? We find it in the vessels going into the inflamed absorbent glands, but we do not find it in the vessels which proceed from those glands. In a certain number of cases, no doubt, the poison is in great measure discharged in the suppuration to which its presence gives rise. But, when we consider the exceedingly minute quantity of an animal poison that is capable of producing its specific action on a part, this explanation is not sufficient. Some of the fluid or particles which enter the gland must, in some form or other, we should think, pass through it, whether it suppurate or not. Even although we should suppose that the inflammation produced in the gland entirely obstructed its channels, still, before such obstruction could take place, some fluid would surely have time to pass; and this, if its quality remained unchanged, would be sufficient to inoculate any part with which it came in contact, or to infect the general system.

A similar series of phenomena may be observed in the affections of the lymphatic vessels which accompany an indurated primary syphilitic sore, with the exception that the action in the glands is of the same nature as that which constitutes the primary disease. The poison taken up by the lymphatics may, during the earliest stage of the disease, inoculate a lymphatic vessel; and it almost always inoculates one or more of the lymphatic glands so as to produce in them exactly the same kind of disease as existed in the part from whence the morbid material was derived. But beyond the lymphatic glands first in order, no farther effect is produced upon the lymphatic vessels. The fluids which they contain are bland and harmless, as far as the production of any local disease is concerned, and afford no indication of containing any poisonous or irritating ingredients.

Up to this point, then, we have unequivocal evidence of the presence of the syphilitic poison, and of its power of contaminating fresh parts. Beyond this the poison can no longer be traced. The fluids in which it was before contained now neither possess the power of irritating the vessels through which they pass, nor, when extravasated from these vessels, of infecting other structures. Here, then, some wonderful change is produced. The specific characters of the poison can no longer be detected either by its morbid effects or by inoculation.

It would appear, then, that although the lymphatic vessels absorb, the lymphatic glands interrupt, the passage of the venereal poisons, and do not allow them to pass until their specific local power of producing fresh irritation has, in some way or other, been destroyed. Both forms of venereal disease are auto-inoculable: the matter from an infecting sore, during its early stage, before the specific hardness has appeared; the product of the suppurating sore during its whole continuance. Each of these may, by natural auto-inoculation, affect the first system of lymphatic glands, and there reproduce its specific and peculiar action, exactly in the same way as if the secretion had been artificially transferred on the point of a lancet. But in neither case can any local specific action be traced beyond these glands.

Physiological absorption.—Hunter believed that the venereal poison might be taken up from a part by the lymphatics, without any apparent local affection, and many cases have occurred in which this appears to have been the case.

Thus, Mr. Lane, one of the present consulting surgeons of the Lock Hospital, has shown, by inoculation, that a bubo was of a specific character, when no primary lesion could be found upon the most minute examination. Satisfactory demonstration upon the point is, however, extremely difficult. With regard to the existence of a suppurating bubo without any accompanying sore, it might be said that a sore had really existed before the occurrence of the bubo, and had healed before the examination took place; and with regard to syphilitic infection, although it may be shown to occur without the existence of any chancre as usually recognised, it would be extremely difficult to prove that some form of the specific actions previously described had not affected a part of the mucous membrane to which the lymphatics are distributed. In the cases referred to where constitutional syphilis occurred without any primary lesion being discovered, it is much more likely that the poison was taken up by the blood than through the lymphatic vessels.

I conclude, from all the observations made in these Lectures, that artificial inoculations made on a syphilitic subject with matter from an unirritated primary or secondary syphilitic affection, generally produces no result. In exceptional cases, some abortive form of the adhesive inflammation may take place, as illustrated in these drawings. If, however, the secretion be taken from a primary affection which has been artificially irritated, or a secondary affection which is naturally inflamed, then the inoculation often succeeds, and fresh matter is formed, which tends rapidly to pass into suppuration. The thickening is not accurately defined as in the primary disease. It gradually disappears in the surrounding parts, and a pustule forms in its centre and discharges. This is the common result in the experiments that have been made in the process of so-called syphilisation. When these inoculations heal, the new matter formed is equal in amount to that which is removed. There is no loss of substance, and often no cicatrix.

The process by which the newly-formed matter is deposited, and that by which it is removed, ultimately balance each other. The results thus produced have long appeared to me to be different from those which occur where matter is inoculated from what I have called the local suppurating sore. Here suppuration occurs at once. Ulceration, to a greater or less extent, necessarily occurs. There is a real loss of substance, and consequently a depressed cicatrix when the part had healed. We have then three different results of the inoculation of syphilitic matter—1. That which occurs in a constitution not previously syphilitic, and which consists essentially in a persistent adhesive action; 2. That which generally occurs in a syphilitic constitution when the inoculated matter has been the result of some accidental cause of irritation; 3. That which is produced by the inoculation of pus from a local suppurating sore.

It is not necessary at present to do more than briefly to allude to the frequency with which these two last actions may exist in different degrees, and produce a mixed result both in artificial and natural inoculation.

Twofold inoculation may occur either in the same or in different parts, at the same or at different times. When it occurs in the same part and at the same time in a person previously unaffected, the results of the inoculation of the secretion from the suppurating sore will first develop themselves, and, subsequently, the results of the inoculation of the secretion from the infecting sore. This depends upon the different period of incubation which naturally belongs respectively to each kind of disease.

It is probable that the two actions resulting from the two kinds of inoculation cannot go on exactly in the same part at the same time, but they may be in such close proximity, or may follow each other so closely in point of time, that their respective effects (as regards the character of the secretion, etc.) cannot be clearly distinguished. The secretions from two different kinds of inoculation may then become mixed together, and if inoculated in that condition, a twofold result may follow. In that case the suppurating sore will first run its course, having all the appearances of a soft, non-infecting chancre, and afterwards (perhaps as this sore was healing up) the adhesive and infecting form of inflammation will appear. The cases in practice which have led to the greatest confusion are those in which the inoculation of the secretion from a suppurating sore has followed, after the lapse of three or four weeks, the inoculation from an infecting sore.

We have, then, the results of two kinds of inflammation, and their respective products in close proximity. The suppurative inflammation does not, then, *prevent* the infection of the patient's constitution; the adhesive inflammation does not *prevent* the appearances of the "specific pustule." The means of diagnosis which would refer these mixed sores either to the infecting or to the suppurating class exclusively are therefore absent.

LECTURE VIII.

URETHRAL DISCHARGES—DIFFERENT KINDS—TREATMENT—CONCLUSIONS OF HUNTER AND RICORD.

Discharges from the parts of the urethra in front of the membranous portion arise from a great variety of causes, and although they may with care be distinguished from each other, this is not always an easy task; any irritation of the mucous membrane of the urethra will produce blennorrhagia, which cannot by its symptoms be distinguished from ordinary gonorrhœa.

Swediaur relates the following experiment, which he performed upon himself: he made a solution of ammonia sufficiently strong to give it a burning taste; he injected some of this at eight o'clock in the morning, compressing the urethra with one hand below the frænum, so as to prevent the liquor from penetrating farther. At the instant the liquid touched the interior of the urethra, he felt such an insupportable pain that he could not retain the injection above a second. The pain was very violent for seven or eight minutes, when he repeated the injection, and kept it in nearly a minute. It produced the greatest pain he had ever felt. He immediately had a strong desire to make water. The pain was so acute that it was nearly an hour before he could stir. He did not make water until the evening. When the urine came to the part to which the injection had been applied he felt a dreadful pain, not however so violent as he had expected. The next morning there was a pretty considerable evacuation of puriform matter of the same greenish-yellow colour as that of a virulent blennorrhagia. The pain which the urine caused in passing was then much increased. The next morning the evacuation was much more abundant, and nearly of the same colour, except that it appeared a little more greenish. The pain he felt on making water was so keen that he injected some lukewarm oil of sweet almonds. This afforded immediate relief. The discharge continued for five days, during which the pain very much diminished. The inflammation now, however, extended backward along the canal. This was followed by a copious discharge which lasted another six days. The symptoms were now much alleviated, when, to Swediaur's astonishment, a fresh inflammation set in, and spread from the limits of the preceding one to the neck of the bladder. This was attended by a heat in making water, and followed by a discharge as copious as that of the preceding attacks. The symptoms of this third attack continued another seven or eight days, when the inflammation, as well as the discharge, gradually subsided.

Any mechanical injury may produce a discharge from the mucous membrane of the urethra, which, however, if left to itself, soon subsides. Such a discharge will sometimes arise from the passage of a catheter. Certain substances taken by the mouth may produce a discharge, such as pepper, guaiacum, and certain kinds of beer. Dr. Oettinger relates the case of a person who swallowed some olive-oil in which a certain quantity of red Turkey cotton had been steeped for some time. He soon after perceived a discharge from the urethra, which had all the appearances of that produced by a gonorrhœa. The discharges from herpetic, leprous, or cancerous sores, Swediaur concludes, are contagious, and may produce a discharge resembling that which arises from a genuine gonorrhœa.

Patients who are subject to attacks of rheumatism or gout will sometimes have a urethral discharge as one of the symptoms.

An elderly gentleman, whom I knew intimately, and who is now dead, was subject to rheumatism, and every time he had a rheumatic attack he also suffered from a white discharge from the urethra.

A colonel in the Guards, who had not exposed himself to any cause of contagion, and who was in full exercise, had great irritability of the bladder, considerable pain in the perineum, and a white discharge from the urethra. There was no inflammation of the lips of the urethra. This officer had on previous occasions been subject to gout, and the present affection was treated as such, and subsided in a very few days.

Any foreign substance lodged in the urethra will, if allowed to remain, naturally produce a discharge. I have here a small calculus which had moulded itself on the orifices of the ejaculatory ducts. It interfered in several ways with the patient's comfort, and must have been there for a long period. I was fortunate enough to dislodge it with a lithotrite.

Blennorrhagia in children, during dentition or other disturbance of the general health, is not uncommon. Hæmorrhoidal tumours, when inflamed, may, either from what is termed sympathy or by a continuity of action, produce a urethral discharge. Malignant diseases of the rectum or bladder are sometimes accompanied by urethral discharges, independently of that which passes with the water; but generally discharges produced by these diseases pass only during micturition. They are usually mixed with blood, but by no means always so.

Some women, both before and after their menstrual period, have a discharge which is communicable in kind. The disease communicated is of little moment if the period has entirely ceased, or if it has not again commenced. But if, from any accidental irregularity, or from other causes, the menstrual fluid becomes mixed with the diseased secretion of another person, a new force and energy is given to the diseased action which it otherwise would not have.

It is said that the accidental contact of the menstrual fluid will give a persistent urethral discharge. This I do not know of my own knowledge, where both parties have previously been free from disease; but no doubt it frequently happens in those who think themselves well at the time. In practice, it will not unfrequently happen that a gentleman will present himself with a discharge very similar in appearance to that of a gonorrhœa, and which can be attributed to no other cause than the accidental contact of the menstrual fluid.

In the communication of constitutional syphilis, the blood may, as we have seen in the first Lecture, play a most important part. If Professor Pelizzari succeeded in inoculating the blood alone of a syphilitic subject, so as to produce constitutional syphilis in a previously healthy person, it is not necessary at any length to insist upon the fact that such inoculation is very much more likely to take place when the blood is mixed with other diseased and irritating discharges. But it is from the admixture of the menstrual fluid with the secretion of the local suppurating sore that most immediate and marked results are observed.

A gentleman had had secondary syphilis before his marriage. Some years after his marriage he contracted a very superficial suppurating sore, which healed shortly with topical applications only. Unfortunately, he had intercourse with his wife before he had much noticed the sore, or thought it of any consequence, and before she had perfectly recovered from her monthly period. He had no further trouble; but she had a large number of acutely painful suppurating sores on the labia, perineum, and sides of the rectum, and, in fact, in every part where the discharge from the vagina had been retained in contact with the parts. In this case the pain was excessive, preventing sleep at nights, and making her dread to pass anything either from the bladder or rectum. The glands in the groins were slightly affected, but subsided without specific treatment. There were no secondary symptoms.

It is not easy to say upon what the sudden increase of activity depends when the menstrual fluid comes in contact with diseased secretions; but I have no doubt of the fact with regard to gonorrhœal discharges, as well as the increased virulence produced when it comes in contact with the discharge from the local suppurating syphilitic sore, or the secretions from different forms of constitutional syphilis.

Many speculative theories might be suggested to account for this. Perhaps the most simple, and that which agrees with what is observed on inoculation, is that the globules of lymph or pus which grow and subdivide at a certain rate, finding themselves in the presence of blood, on which they naturally feed indirectly, have a sudden and immediate impulse given to their growth. But be that as it may, there can, I think, be no doubt that the presence of the menstrual fluid, and perhaps of blood in any other form, gives a peculiar virulence and activity to every kind of venereal poison.

Hunter included, as we have seen, the syphilitic discharge from the urethra and a gonorrhœa in one description; and he says that the different symptoms observed in different cases are almost endless. The discharge often appears without any pain, and the coming on of the pain is not at any particular time after the appearance of the discharge. There is often no pain at all, although the discharge be considerable in quantity, and of a bad appearance. The pain may go off while the discharge continues, and will sometimes return again. In general, the inflammation in the urethra does not extend beyond an inch or two from the orifice; sometimes it runs all along the urethra to the bladder; sometimes the disease appears soon after the application of the poison, as in a few hours; at other times not till after six weeks.

I will not now stop farther to consider which of these symptoms are due to a gonorrhœa simply, and which to a syphilitic discharge from the urethra; but it is important to note that Hunter, considering them all as syphilitic, believed that the disease might spread by continuity of action to the neck of the bladder, and even beyond it.

Under the supposed consequences of this disease Hunter first notices stricture. The obstructions in the urethra which produce this disease, he observes, are generally attended with a discharge of matter or gleet; and they are never found to come on during the venereal inflammation. If then, as has been shown in the second of these Lectures, the mucous membrane of the urethra may be affected with true syphilitic inflammation in its primary and secondary forms,—if that inflammation, commencing in one part of the urethra, may extend to another,—it becomes clear that there is no part of the passage which may not be the seat of this specific action. Now, the secretion which results from this inflammation we have seen to be inoculable, and this secretion is necessarily mixed with the semen in its passage through the urethra. It seems, then, more likely, when such a disease does exist in the urethra, and where there is no disease in the testes, that hereditary as well as other forms of syphilis, should be communicated from the diseased mucous membrane rather than from a healthy gland. I have attempted to show elsewhere that in syphilitic subjects the natural secretions of a gland, provided that gland be not itself diseased, will not communicate syphilis; and I therefore conclude, as the urethra is much more frequently the seat of syphilitic inflammation than the testes, that in the vast majority of cases of hereditary syphilis, arising from the father, the poison is conveyed by means of a discharge originating in the urethra or in some of the neighbouring glands, and not from the semen. Again, if primary and secondary syphilitic inflammation may affect the mucous membrane of the urethra, of what nature would the morbid products be which are formed by that kind of inflammation? Those which are thrown off in the shape of mucus and pus we acknowledge to be syphilitic. What shall we say of those which remain in the shape of organised lymph around the urethra? Now, I wish here particularly to guard myself against being misunderstood. A very great number of cases of stricture arise, I doubt not, from the effects of inflammation consequent on an ordinary gonorrhœa or some other non-syphilitic affection. But there are others, which arise in syphilitic constitutions, and some of these, as I believe, in direct connection with syphilitic disease of the lining membrane of the urethra. The time at which thickening around the urethra occurs lends some support to this view. It is not, as Hunter remarks, during the time that the inflammation lasts, but after it has subsided, that the deposit takes place—or in other words, at the time when deposits of lymph from secondary syphilis might be expected in other parts of the body. Cases of gonorrhœa and syphilis are so mixed up together, as observed in practice, that it is often exceedingly difficult to say to which any consequent chronic affection of the urethra should be assigned. But I think I should be safe in asserting that if 1000 patients were taken who had had gonorrhœa alone, and 1000 who had had gonorrhœa and syphilis, that stricture would be found much more commonly in the latter than in the former.

Stricture was treated by Hunter as, and is now generally considered to be, a local disease. But if what I have now stated be correct, there must be many cases in which it has a constitutional origin, and in which it is best treated by constitutional means. And in truth, long before the different kinds of venereal disease were distinguished, as we now know them, acute practitioners, from observation only, were in the habit of treating obstinate discharges from the urethra, whether accompanied by stricture or not, by constitutional means. Thus, Swediaur (p. 207) says: "I have seen blennorrhœas that resisted all remedies cured by a complete mercurial course."

The late Mr. Johnson of Savile Row, who had great success in private practice, was in the constant habit of treating such cases with mercurial preparations. In France, M. Baumès and M. Layneau still treat blennorrhagia with mercury. Strictures, as such, have not often been thus treated; but I am satisfied that there are a certain number of these which can be permanently cured only by constitutional anti-syphilitic treatment.

Hunter believed that the venereal poison produces different results according to the surface to which it is applied.

The application of the poison, he says, produces two sorts of disease, seemingly very different from each other. "In the first there is a formation of matter without a breach in the solids, called a gonorrhœa. In the second there is a breach in the solids, called a chancre. Neither of these two ways in which the disease shows itself is owing to anything peculiar in the kind of poison applied, but to the difference in the parts contaminated."

Experience has now taught us that the poison from a suppurating sore applied to the urethra will there produce an ulceration, as on any other part; and conversely, that the true infecting syphilitic poison may pass through the skin or the cuticle, and produce its effects upon subjacent parts without any abrasion.

The local suppurating syphilitic sore is now well known to affect the urethra as well as other parts; and when this is the case, it will produce an urethral discharge. This discharge, however, is not large in amount; and, inasmuch as the chancre can, as I believe, almost always be seen, there is no difficulty in the diagnosis. In this disease there is always suppuration and always loss of substance.

The discharge from the urethra in cases of gonorrhœa presents a great variety of appearances in different cases. These differences, Hunter says, depend upon the increase or decrease of the inflammation, and not on the poisonous quality of the matter itself; for any irritation on these parts equal to that produced by a gonorrhœa will produce the same appearances; and the changes in the colour of the matter are chiefly observable after it has been discharged upon a cloth and become dry. The appearance upon the cloth is of various hues: in the middle, the matter is thicker and more in quantity, and is therefore generally of a deeper colour; the circumference is paler, because the watery or serous part of the matter has spread farther. At the outer edge of all it is darkest, and this appearance is owing to its being only water with a little slime, in which some of the tinge is suspended, which, when dry, gives a transparency to the part that takes off from the white colour of the linen. It is very probable that there is a small extravasation of red blood in all cases where the matter deviates from the common colour, and to this the different tinges seem to be owing. As this matter arises from a specific inflammation, it has a greater tendency to putrefaction than common matter from a healthy sore, and has often a smell peculiar to itself.

There is one form of inflammation of the urethra which requires especial notice. The glands along the urethra may become inflamed and thickened; and then a series of small knots may be felt along the passage, extending sometimes as far back as the bulb. This condition requires only to be mentioned to be distinguished from the knotted feeling produced by an inflamed lymphatic. The inflamed lymphatics are generally found on the dorsum of the penis, the little nodules in them are much smaller than those produced by inflammation of the glands of the urethra, and they are found in general to accompany the infecting form of chancre.

It is beyond the scope of these lectures to go into the treatment of urethral discharges generally, but there are one or two points with regard to general treatment which may be noticed in a practical point of view.

As Hunter did not distinguish between gonorrhœa and a syphilitic discharge from the urethra, we might naturally have expected to find him giving mercury very generally in these affections. Accurate observation, however, prevented him from falling into this error. He says:—"I doubt very much of mercury having any specific virtue in this species of the disease (gonorrhœa); for I find that it is as soon cured without mercury as with it. Specific medicines," he says, "taken into the constitution, and passing off by the urine, may act upon the urethra in their passage through it. The balsams and turpentines pass off in this way, and become specifics for many irritations of the urinary passages; but how far medicines, which have the power of affecting particular parts when sound, or when under diseases peculiar to those parts, have also the power of affecting a specific inflammation in these parts, I know not; but do not believe that they have any considerable powers in this way. It is possible, however, that they may remove any attending irritation, although not the specific one."

In spite of what Hunter here says, medical men engaged in the largest practice have for years attributed something like specific virtues in these diseases to cubebs and copaiba when given internally. M. Ricord has given the details of a case in which there was an opening in the lower part of the urethra through which the urine passed. The patient was treated with copaiba, and the part of the urethra over which the urine passed was cured, but the part in front of the opening was not. In another case, also related by Ricord, where there was an opening in the lower part of the urethra, the patient, by turning the penis in a particular way, could close the opening. This patient had a gonorrhœa, and was treated with copaiba. He was directed to make water through the opening only. The disease in the posterior part of the urethra appeared cured; in the anterior part it remained as before. The patient was then directed to close the opening in the lower part of the urethra before making water, and the disease in front of the opening was then also cured. The local application of copaiba, although useful in some cases, does not appear to produce what is considered its specific effect. It must be digested partially or completely, and passed through the kidneys and the urethra, in order that this effect may be produced; and I may here express my entire belief that every form of chronic suppuration of the urethra, or of the prostate gland, may be beneficially influenced by the exhibition of copaiba; but how far it acts respectively upon what Hunter calls the "attending irritation," or upon the specific disease, I will not attempt to determine. But of this I am satisfied, that it may produce a marked effect upon any part in which it comes in contact in its passage from the kidneys, and the same may be said, in some degree, of other similar preparations. This is a subject of some importance, both with regard to the immediate relief of the symptoms, and also as to the effects upon the patient's constitution. It is especially of consequence with regard to the action of these medicines upon the kidneys. The kidneys are supplied with blood and nerves in a greater degree perhaps than any other organs in the body; a large portion of the solid excreta of the body pass through them. It is they that regulate to a nicety the quantity of the fluid in the animal system. If perspiration be checked, it is they that immediately compensate for the diminished secretion of the skin. If too much fluid is taken, the balance is re-established by their increased action. When the stomach, from being overworked, or from any other cause, fails perfectly to digest its contents, the imperfectly converted material, in the secondary processes of assimilation, often produces disturbance in some parts of the circulating system. Hence various forms of congestion, gout, and rheumatism. If, however, the kidneys are sound, the ill-assimilated matter is generally removed in the shape of lithate of ammonia, and may be seen in the water, which becomes turbid as soon as it has cooled. There are a thousand functions which the kidneys perform in the preservation of the balance of health, all of which may be more or less interfered with long before the kidney itself shows any alteration of structure which can be fathomed by the highest microscopical power. It is a subject worthy the best consideration of the medical man in the treatment of disease to endeavour to give such medicines only as shall produce their effects without injury to these highly-gifted and sensitive organs.

Now, most of the medicines that are given for the cure of urethral discharges are in part, at least, eliminated through the kidneys, and most of them produce more or less irritation of those organs. It becomes, then, a serious question how long such medicines may be continued with impunity. The rapidity with which some substances pass to the kidneys, and are in part eliminated by them, is illustrated by the action produced during the digestion of copaiba, turpentine, and especially of asparagus. The peculiar odour of these may be detected in the urine very shortly after they have been taken. I do not know that asparagus ever did any injury to the kidneys, but I feel sure that there are a large class of substances which do. Among the foremost of these I would class gin, turpentine, and copaiba. Apart from any pathological considerations, I would venture to say—and I believe that extended observation will fully confirm the fact—that those who in early life have been subject to irritation of the kidneys are liable to a variety of aches and pains, suffer more from the effects of indigestion, and often are afflicted with serious diseases, which they would have escaped had the kidneys remained in their natural healthy state. Their perfect action is required in order to eliminate from the system those injurious or redundant substances to which I have alluded. Nor is functional disease of the kidney alone to be apprehended. We have yet to learn how far organic disease of the kidneys may depend upon prolonged irritation. The thickened coats of the capillary tubes, which have lately been so ably described by Dr. Johnson, Sir William Gull, and Dr. Sutton, would have no more probable cause than the circulation through them, if not the stagnation in them, of some of the elements contained in the substances named. Apart, however, from any considerations of the *modus operandi* of drugs or spirits which irritate the kidneys, an extended observation would lead me to the decided conclusion that those who have been subject to such irritation for any length of time die sooner, and in more unexpected ways, than those who have not. This is a practical point, which should never be lost sight of in the treatment of disease, and is particularly applicable to the treatment of urethral discharges. There is no remedy which, given internally, influences some of these discharges in my opinion so much as copaiba; but, for the reasons I have now given somewhat at length, this medicine should not, I think, as a rule, be long continued. I generally give it in combination with sulphuric acid, in a form recommended by the late Mr. Harrison, of Brook Street. I seldom give more than half a drachm for a dose, and rarely continue it for more than a week at a time. The copaiba, as I have said, is digested before it produces its effect, and the addition of the sulphuric acid may in some way assist this process; however that may be, I have no doubt of the efficacy of this particular combination. Cubebs-pepper does not irritate the kidneys in the same degree as the copaiba. It expends its influence rather upon the mucous membrane of the bowels, and therefore, as pointed out by the late Sir B. Brodie, is an excellent remedy for hæmorrhoidal tumours. Its effects upon urethral discharges are therefore probably in a great measure counter-irritant.

We have now considered the principal forms of urethral discharges as they occur in men, but the catalogue is by no means exhausted. Most of these discharges may be communicated in kind to women.

A pus globule, from whatever source derived, will grow, subdivide, and multiply for a time, when translated to another part, and may there produce an action of the same nature as that which originally produced it. Some of these actions have a specific character, but many of them have no specific origin.

In women the mucous lining of the urethra and vagina form one continuous membrane, and the diseases of one part, by continuity of action, are readily transmitted to any other part. This membrane, taken as a whole, is much more extensive, much more vascular, and therefore subject to a much greater variety of constitutional influences, than the mucous membrane of the urethra in men.

Any general disturbance of the health will produce a vaginal discharge in women; and these are so numerous that I will not attempt to enumerate them. If, then, the exact nature of a discharge in a man may prove of difficult diagnosis, the difficulty in women is increased tenfold. Babington says, "The distinction between venereal gonorrhœas and simple purulent discharges, which are not derived from infection, is to be found less in the severity of the symptoms than in their obstinacy. The urethra is often attacked with inflammation as violent as that of a gonorrhœa in cases where there has been no possibility of infection. This discharge may be as copious, and exactly similar both in colour and appearance." If this be the case in men, what shall we say with regard to the diagnosis of these cases in women, when we consider the great variety of causes which may give rise to discharges in them, the difficulty there may be in making an examination, and the possible motives for deception? As patients present themselves at the Hospital, the diagnosis is sufficiently easy. In fact, they have already diagnosced their own diseases, and come ready to mention their symptoms. But the case would be very different if the surgeon had to decide upon his own responsibility, especially if the patient were an unwilling witness.

Not long ago I saw a patient who had purulent discharge sufficiently abundant, the whole mucous membrane was red and inflamed, and I thought it must be a case of gonorrhœa, although I was prudent enough not to say so. A week after I saw this patient again. The inflammation had all disappeared. The mucous membrane was of its usual colour, and the discharge not more than natural. I reversed my diagnosis, and congratulated myself that I had not unjustly accused the patient. On the other hand, it has not unfrequently happened that patients have assured me that they had had the persons from whom they had been infected examined by their own medical men, and that they were reported free from all disease; and in some cases the medical men themselves have called upon me and given the same account. Hunter's opinion upon this subject is thoroughly practical and trustworthy: "The appearance of the parts," he says, "often gives us little information, for I have frequently examined the parts of those who confessed all the symptoms, such as increase of discharge, pain in making water, soreness in walking or when they were touched; yet I could see no difference between these and sound parts. I know of no other way of judging in cases where there are no symptoms sensible to the person herself, or where the patient has a mind to deny having any uncommon symptoms, but from the circumstances preceding the discharge. A woman may have this species of the venereal disease without knowing it herself, or without the surgeon being able to discover it even on inspection.

Surely there is here matter for the serious consideration of any medical man who undertakes to advise her Majesty's ministers with respect to the working of the Contagious Diseases Acts; and especially with regard to the extension of those Acts to the civil population. It is not in any way my wish or intention here to offer an opinion on the propriety, or on the effects of the Acts referred to; but as the responsibility of the principles upon which those Acts are framed will be thrown ultimately upon the medical profession, and as the practical application of those Acts will involve the personal responsibility of medical men, I am somewhat jealous for the future honour of our profession, and anxious that any opinions and advice given by us to the Legislature should stand the test of time; and, in order that they may do so, that they should be established upon a really scientific basis.

Notwithstanding the statements of Hunter and of Pearson that mercury had no beneficial effect in an ordinary gonorrhœa, medical men generally, at one time, treated all urethral discharges with mercury. They believed that venereal diseases all arose from the same source, and were all to be treated in the same manner. Mercury was to be administered for every form of the disease, and, if the patient got worse, more mercury was to be given.

Sir Astley Cooper was one of those who was foremost in checking the evils of this theoretical practice: "Let those persons," he says, "who think that gonorrhœa can be cured by mercury, go round our wards and see whether mercury has any effect upon that disease. Look at a hundred patients in our foul wards, many of whom come into the hospital with syphilis and gonorrhœa, and many, I am sorry to say, with gonorrhœa only? What is the miserable treatment of these patients? You are aware, gentlemen, that I scarcely ever enter the foul wards of the other hospital; when a particular case demands my attention I have the patient removed to a clean ward. I abstain from entering those wards, because patients under gonorrhœa are compelled to undergo so infamous a system of treatment that I cannot bear to witness it. To compel an unfortunate patient to undergo a course of mercury for a disease which does not require it, is a proceeding which reflects disgrace and dishonour on the character of a medical institution. No consideration shall induce me to repress my feelings upon this subject; no authority shall restrain me from giving expression to those feelings. I do say that the present treatment of patients under gonorrhœa in these hospitals, by putting them unnecessarily under a course of mercury for five or six weeks, is infamous and disgraceful."

I have thus quoted Sir Astley Cooper at length, because, if it were true in his day that a disease was frequently and unscientifically treated by mercury, it might be said with equal force, although perhaps in not such strong language—at least from this chair—

that any other form of venereal disease that was not beneficially influenced by mercury, that got well as readily without it, should not be thus treated; and I am bold to assert that there is at least one form of such disease, besides gonorrhœa, which does not affect the human constitution; which may clearly be distinguished from other diseases; which is not beneficially influenced by the use of mercury, and yet for which mercury is even now constantly given. That disease I have described in the last Lecture, under the name of the Local Suppurating Sore.

To Ricord must for ever be ascribed the honour of having clearly established the difference between an ordinary gonorrhœa and syphilis.

From a vast number of experiments he came to the conclusion that the matter of gonorrhœa was not inoculable.

With all the great respect he had for Hunter he was driven to explain away his experiment. "The ulceration in the throat and the pustules which appeared in Hunter's case," he says, "might have depended upon some other cause.* Might not the symptoms," he asks, "have depended upon some other subsequent infection? Might not the patient have previously had the disease? How can we rely upon such an observation? Besides, the treatment lasted over a period of three years."

Had Ricord known what we now know—that Hunter performed this experiment upon his own person—he would not have raised a doubt as to whether the symptoms observed were syphilitic; for if Hunter did not know a syphilitic eruption when he saw it, there are few other surgeons of his day who would. We may be sure that Hunter with his known accuracy selected his subject, and observed the symptoms with wonderful interest and care. With regard to the length of time the case lasted, Hunter treated himself by way of experiment, probably as he would not have treated one of his patients. He had recourse to short courses of mercury, which, in his as in the present day, would often remove the symptoms without curing the disease.

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* *Traite Pratique*, p. 106, Paris, 1838.

How is it then, viewing Hunter's experiment as fully and correctly recorded, that two such men, watching closely the processes of nature, constantly appealing to experiment, and each having an immense field of clinical observation, should arrive at such diametrically opposite conclusions? For such they are. It is true that Ricord tries to soften down and excuse the error into which his great predecessor had, as he believed, fallen; and he everywhere speaks of him with the greatest admiration and respect. Yet now we have to consider facts. Here we have the two greatest authorities of their day coming to a different conclusion upon a matter capable apparently of being settled by a simple experiment, and drawing opposite physiological, clinical, and practical conclusions from it.

Nemo sibi vivat. No author announces a truth without instructing others, and no one commits an error without involving others in the mistake. Ricord, following Hunter in one most important doctrine, says—"The celebrated Hunter, by wise and accurate experiments, confirmed subsequently by a great number of other experiments, showed that the constitutional manifestations of syphilis could not be inoculated." * We have here an instance showing how an erroneous opinion of one great man may mislead another, and I shall endeavour to answer the question which I have proposed, namely, how it is that two such men were driven to a conclusion directly opposite upon a simple matter of experiment and observation.

Ricord says that a gonorrhœa is not truly syphilitic because it cannot be inoculated upon the patient who has it. The same reasoning would prove, as we have seen, that a secondary or even a primary infecting sore was not syphilitic. It is, as has been shown in the second Lecture on syphilis, simply a *petitio principii* to say a gonorrhœa is not inoculable because it is not syphilitic, and that it is not syphilitic because it is not inoculable, while other affections that are acknowledged to be syphilitic are not inoculable under the same circumstances. The secretion from an uncomplicated Hunterian chancre is not more often inoculable than a gonorrhœal discharge. Therefore, to attempt to distinguish the nature of the two by inoculating the secretions upon the patients themselves is necessarily futile. In all such investigations the experiments must be uncomplicated. We must observe the processes of diseases as they naturally develop themselves, uninfluenced by pre-existing disease and uncomplicated with other affections.

Among the vast number of cases that passed under Ricord's observation there were necessarily some in which, as in Hunter's experiments, a urethral discharge had apparently communicated syphilis. These cases were difficult of explanation upon his theory. But his powerful imagination was equal to the occasion, and the force of his convictions impressed others with his views. A concealed chancre was made to account for the stubborn facts, and the secretion from this sore was supposed in every such case to have been inoculated.

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* Op. cit., p. 159.

Now a syphilitic sore, which is followed by constitutional symptoms, does not necessarily secrete pus. When uncomplicated, the secretion from its surface is very little; and in the cases in which a urethral discharge was supposed to have communicated syphilis, the disease must have been of the infecting kind. If any urethral sore could exist which would produce the amount, or anything like the amount of secretion that is observed in these cases, it would certainly be the suppurating sore, and not that which I have described as affected with the adhesive form of inflammation. So that the very theory presupposes the existence of another disease, independent of the infecting sore. But, in truth, concealed urethral sores are, as I have said in a previous Lecture, exceedingly rare.

Drawing his conclusions too generally from his experiments, Ricord concluded that no secretion, except that from a primary syphilitic sore, could produce syphilis, and consequently that no secretion from a mucous membrane could produce it. Here he differed from Hunter. The facts already mentioned show that in this respect he was wrong. Hunter also had carried his opinions to extremes. He knew that a urethral discharge would produce syphilis; he knew that a chancre would produce syphilis; and although he had in words deduced a correct conclusion from his experiments, and said that the secretions from secondary syphilitic manifestations would not produce syphilis when inoculated upon the same body, yet in theory he went beyond this, and implied that no secretion from any secondary affection could produce syphilis when inoculated upon another person. The difficulties into which he was led, and into which, by his powerful intellect, he led others, may be illustrated by his remarks concerning the introduction of the venereal disease into the South-Sea Islands. If we were to reason, he says, upon the probable circumstances attending the voyages to that part of the world, we should conclude that the disease was conveyed there by a gonorrhœa, and not by a chancre. "For it is almost impossible to carry a chancre so long a voyage without its destroying the penis; while we know by experience that a gonorrhœa may continue a great length of time." * We have now a much easier way of accounting for the transmission of syphilis to a distance, namely, by its being communicated by secondary affections; and that this really was the mode in which it was introduced to the South-Sea Islands is confirmed by the fact that after the first introduction of the disease no mention is made of the existence of a gonorrhœa at Otaheite; but in Cook's last voyage he found that every form of venereal disease was then there. I should say that the infecting form of syphilis in the present day is much more generally communicated by secondary affections than

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* *On the Venereal*, p. 14.

by primary. Within a few hours of the time I write, I have seen a gentleman who was formerly under my care. He went to India, got married, and had some healthy children. He then had a node on his forehead, for which he took eight or ten calomel baths only. He returned to England, when a dark copper-coloured patch appeared on the right side of the urethra, exactly on the site of the primary chancre; a thin sero-purulent discharge made its appearance at the same time from the urethra. Fortunately, in this case, the gentleman's wife was near her confinement, and no sexual relations had taken place for some time. If they had, I doubt not but that infection might have followed, and that after a much longer period than it took Wallis to reach the South-Sea Islands.

If the conclusions to which I have arrived be correct, it is needless to insist upon their immense importance in a practical, social, and medico-legal point of view. It will very frequently happen that a patient, having had constitutional syphilis which has not been completely cured, will contract gonorrhœa, or a discharge from the urethra will come on without any fresh infection. The patient may be treated for weeks or months with the medicines and injections ordinarily used for gonorrhœa, and the discharge will persist. If the real nature of the affection be ascertained, a mild course of mercury will then often cure the patient without further difficulty.

LECTURE IX.

PROSTATIC DISCHARGES.

HAVING considered, in the last Lecture, the principal discharges which affect the urethra in front of the membranous portion, I propose now to consider those which are more or less connected with the prostatic portion of the urethra, and with the prostatic gland itself.

It has been supposed that the semen could communicate syphilis, but that the secretions from the prostate gland, the vesiculæ seminales, and the other glands which surround the urethra, could not. Why the secretion from the testis should be supposed to possess this power, while it is denied to the secretions of other glands, it is difficult to say; and when we consider that the discharges from the urethra are always more or less of a mixed character, it would be wise, I think, to suspend our judgments upon this point until we have some evidence to guide us.

Hunter has left us comparatively little on the subject of discharges from the prostate and Cowper's glands. The short account he has left us, however, is full of interest; and indicates, like the rest of his works, the accuracy of his observation and the soundness of his judgment.

"The small glands of the urethra and Cowper's glands," he says, "secrete a slimy mucus similar to the white of an egg not coagulated. This seldom appears externally, or flows from the urethra, but during the indulgence of lascivious thoughts; and is seldom or never attended to, excepting by those who are under apprehensions either of a gonorrhœa coming on, or imagine the last infection is not gone off entirely; and such patients are kept in constant terror by this natural discharge. They often find it in such quantity as to leave spots on the shirt, but without colour; and often after toying, the lips of the urethra are as it were glued together by it, from its drying there; which appearances alarm the mind of the patient without cause. Although this is only a natural discharge, and is now secreted under the same influence which naturally produces it, it must at the same time be owned that it is commonly much increased in those cases of debility arising from the mind, which is probably not easily to be accounted for; it would seem that the contest between the mind and the body increases this secretion, for it cannot be considered as a disease of the parts.

"The discharge of the secretions of the prostate gland and vesiculæ seminales has been imagined to be the consequence of the venereal disease in the urethra; but how far this is really the case is not certain; though most probably it is not. It is a discharge of mucus by the urethra, which generally comes away with the last drops of urine, especially if the bladder is irritable; and still more at the time of being at stool, particularly if the patient be costive; for, under such circumstances, the straining or actions of the muscles of those parts are more violent. It has generally been supposed that this discharge is semen, and it is the disease called a seminal weakness; but it appears, from many experiments and observations, that the discharge is undoubtedly not semen. It is only the mucus secreted either by the prostate gland, or by those bags improperly called vesiculæ seminales, or both; and it may not be improper to give here the distinguishing marks between these two fluids. First, I may observe the discharge in question is not of the same colour with the semen, and is exactly of the colour of the mucus of the prostate gland, and of those bags. It has not the same smell, and indeed it hardly has any smell at all. The quantity evacuated at one time is often much more considerable than the evacuation of semen ever is; and it happens more frequently than it could possibly do were the discharge semen. It is a disease that often attacks old men, where one can hardly suppose much semen to be secreted; and we find that those who are affected with this disease are no more deficient in the secretion and evacuation of the semen in the natural way than before they had the disease. If the mind be at ease, this shall take place immediately after a discharge of this fluid, as well as before, which could not be the case were it semen. Further, if those that labour under this complaint are not connected with women, they are subject to nocturnal discharges from the imagination, as persons are who are perfectly sound; and indeed most patients, when made acquainted with these circumstances, become very sensible that it is not the semen.

"It is not clear what the diseased state of the parts is upon which this discharge depends—whether there is a larger secretion of this mucus than natural, or whether it is entirely owing to a preternatural, uncommon action of those parts; and if this last, why these parts should be put into action when the bladder, rectum, and abdominal muscles are thrown into action to expel their contents, is not easily explained. It is plain that the most violent actions of these parts are necessary to produce this evacuation; for it does not come with the first of the urine, nor in general when they go with ease to stool.

"As it was thought to be a seminal discharge, it was imagined to arise from a weakness in the organs of generation; and as frequent discharges of the semen in the natural way generally weaken, it was therefore imagined that this discharge must also weaken very considerably; and the imagination will operate so strongly as to make the patients believe they really are weakened. Whether the cause of such a discharge is capable of weakening, I will not pretend to say; but I believe that the discharge simply does not. Fear and anxiety of mind may really weaken the patient. In the cases I have seen of this kind, the mind has been more affected than the body.

"From my own practice, I can hardly recommend any one medicine, or way of life, for removing this complaint. In one case I found considerable benefit from giving hemlock internally.

"The idea that has been formed of the disease leads to the practice generally used and recommended, such as giving strengthening medicines of all kinds, as bark, etc., but I never saw any good effects from any of them; and I should rather be inclined to take up the soothing plan to prevent all violent actions. Keeping the body gently open will in some degree moderate the discharge, and probably may effect a cure in the end."

Desault mentions that when inflammation of the prostate gland does not terminate in resolution, suppuration is frequently the consequence. This does not seem to attack the body of the gland, but only the integuments, and the cellular tissue which unites the lobes of which it is composed. He had frequently seen the cellular tissue filled with a purulent matter; sometimes he had observed little follicles or bags of pus between the lobes of the prostate; and he makes this curious remark, which I wish especially to note in reference to a case to be presently mentioned, that these collections of matter are frequently on the outside of the gland, either between it and the rectum, or on the side of the bladder. He mentions that a prostate gland thus affected does not diminish in volume, but, on the contrary, rather increases.

Sir B. Brodie has given us much valuable information with regard to the prostate; but he does not add much to what Hunter had said with regard to the discharges from this gland through the urethra. "It is not uncommon," Brodie says, "on making a section of an enlarged prostate gland, to find in its substance several small collections of a muco-purulent fluid having the appearance of pus mixed with the natural secretion of the gland. Sometimes there is a distinct abscess which attains a very considerable size, presenting itself in one or another situation, according to circumstances.

"A gentleman who had laboured under enlargement of the prostate for many years complained of uneasy sensations about the hips, extending down the thighs; at the same time his pulse was accelerated, and he was subject to attacks of chilliness not amounting to rigors. He was in the habit of introducing the catheter, and he observed that it entered the neck of the bladder with some degree of difficulty; as if the urethra, where it passes through the prostate, was contracted in its diameter. These symptoms had existed for many months, when at last, in the act of using the catheter, an abscess burst, and several ounces of pure pus were discharged by the urethra.

"I had another patient," Sir Benjamin Brodie remarks, "who complained of similar sensations, and also of an increased difficulty in introducing the catheter, so that I was led to believe that an abscess had formed in the prostate. When he had continued in this state for many weeks, an abscess burst into the rectum, discharging a considerable quantity of pus, and this was followed by a relief of all the symptoms. In a third case, the patient, not content with leading the quiet life which I had recommended, returned to his favourite amusement of hunting. The formation of an abscess in the prostate was the consequence. When I was again consulted the abscess had presented itself in the perineum. I opened it with a lancet, and some ounces of pus escaped. However, the whole of its contents were not freely discharged through the artificial opening, and the abscess afterwards burst into the urethra. For a long time matter continued to flow in large quantity by the orifice, and by the urethra also. At last the quantity of discharge underwent a sensible but gradual diminution. It had not, however, entirely subsided when I last saw the patient, which was more than two years from the period of the abscess having been opened."

It is clear, then, from these observations, that prostatic abscess may form in the gland, or in the cellular tissue around the gland, or in both these situations at the same time.

A gentleman, many years ago, consulted me for stricture. This was of the most irritable character. In consultation with Sir B. Brodie, it was resolved to use bougies in the gentlest possible manner. The urine, at that time examined by Dr. Beale, was found to contain a very large proportion of phosphates.

Sometimes this gentleman would pass his water in a very fair stream, and then again the passage would close, and he would only be able to pass it in drops. This change was generally preceded or accompanied by the appearance of light straw-coloured water, which contained the triple phosphates and pus. There was never any ropy mucus in the water, but occasionally small clots of blood passed, sometimes after the use of instruments, but sometimes without. There was an occasional white discharge, small in quantity, from the urethra at the time of making water. The discharge would sometimes come before the water, sometimes after it, but generally it appeared more or less mixed with it. This gentleman complained constantly of pain at the end of the penis. The prepuce became greatly swollen, so that it could not be retracted; and when the swelling at length subsided, it left a permanent phimosis. The irritability of the bladder was occasionally excessive, but always worse when what he called the white water, above described, was passed. He would sometimes have to leave the room every half-hour, and to get up as often during the night; at other times he would retain his water for two or three hours. The urethra was dilated with very soft, flexible bougies. The passage of these over the prostate gland would sometimes give excessive pain, and was sometimes followed by a small quantity of blood. This was usually in small clotted particles; but in a few instances it came out immediately the bougie was withdrawn. After the water was drawn off by a catheter, about half a teaspoonful of thin white matter would sometimes flow out, as the eye of the instrument was withdrawn over the prostate gland. The swelling of the prepuce was accompanied by much urethral irritation, and even in the daytime the penis would remain for a long time in a semi-erect condition.

After this state of things had continued for some years, the gentleman became more out of health, and evidently weaker. A fluctuating tumour presented itself in the left loin. This was opened, and a very large quantity of thin pus was discharged. It had no fœcal odour. A probe introduced passed directly forward for six inches without meeting any obstruction. There was at this time no albumen in the water. After some weeks the discharge ceased, and there was no more inconvenience from this source at the time.

The explanation of the swelling of the prepuce I suppose was, that the plexus of veins around the prostate had become affected, and prevented the free return of blood from the penis. Hence the distressing priapism from which he suffered. At length, as I conceive, suppuration occurred along the course of some of the veins thus affected, and the matter was conducted along the course of the spermatic plexus to the loin.

In this instance, that the discharge from the urethra was prostatic I think is proved by its sometimes coming before the urine, sometimes mixed with it, and sometimes during the muscular efforts to expel the last drops. If the explanation which I have given be correct, there must therefore have been suppuration on the exterior of the gland, and also within its substance; the first discharging through the loins, the last through the urethra. This gentleman's sufferings extended over many years. Sometimes he was unable to walk or to ride. There was generally pain in passing water, and this was referred almost always to the extremity of the urethra. The urethra felt sore, and the pain sometimes extended around the loins and down the legs; but the principal irritation and soreness were at the end of the penis.

After a time, one of the greatest troubles that this gentleman experienced was incontinence of urine. If he fell asleep soundly, he would sometimes awake finding that the water had gradually saturated all his clothes, and occasionally that it had passed into his shoes. After several years of misery—either in the natural course of the disease or in consequence of treatment—he was restored to a comparative state of comfort, and could walk and ride as usual.

After the lapse of some eighteen months, however, this patient again suffered greatly with pain on the right side of the perineum, extending down the right thigh. There was great pain in making water, which was of the same nature as formerly, but thicker. The prepuce again became swollen and red, and after some days the cuticle peeled off. The whole urethra became exceedingly tender, and the glans itself nearly the size it would be in a state of erection. Some viscid grayish-white fluid, small in quantity, passed from the urethra independently of the water. At length some matter was detected in the right loin, having, as I conceive, made its way up the spermatic plexus on the right side, as it did formerly on the left. The patient ultimately died, and it was unfortunately impossible to obtain an examination of the parts.

The cases which I have now given are very rare. They are cases in which abscesses form, and discharge themselves sometimes into the urethra sometimes elsewhere. But in the great majority of instances discharges from the prostate gland are of a different nature. Occasionally, in examining an enlarged prostate gland, it will be found that by pressure a quantity of white fluid is discharged from its follicles. The gland is enlarged, feels soft and pulpy, and the white fluid is easily expelled. It is not contained in any cavity or cyst, but has the appearance of being the altered secretion of the part. In such a condition a portion of the discharge would naturally flow into the urethra, without anything else being necessarily discharged at the same time.

This is a disease having its seat deep in the follicles of the prostate gland; and it is very doubtful whether any constitutional or local treatment can be of much benefit. It is a disease of old age. There is another analogous disease which generally affects patients in early life.

A patient with light hair and eyes, a dilated pupil, and fair skin, will find that he has a white discharge from the urethra. This at first is often mixed with a little blood. There may be some pain in making water, and this pain may be referred to the extremity of the penis. The glans penis itself is sometimes of a darker hue than usual around the urethra; but the lining membrane of the urethra itself is not inflamed, nor does pressure along any part of the urethra give pain. This condition may occur after a suspicious connection, or may be altogether independent of it. The patients in whom it occurs are often extremely anxious as to its possible cause. This discharge sometimes will be unattended with any other symptom; at other times there will be pain in making water. In rarer cases there will be deep-seated pain in the perineum; and sometimes this extends around the loins and down the thigh, usually on one side only. The discharge is sometimes more, sometimes less—scarcely, if at all, influenced by treatment—and will often continue for months.

A young gentleman, with red hair and light eyes, complained of great pain in the perineum, right loin, and down the right thigh. It kept him awake at night, and caused him to walk lame during the day. Deep pressure on the perineum increased the pain; a very considerable flow of white matter occurred from the urethra, but there was no increase of sensation on micturition. This condition continued many weeks. I was enabled to satisfy this gentleman that there was nothing venereal in his case, and he was glad to be able to leave off treatment and go into the country. The symptoms recurred occasionally, but did not prevent his getting married.

A married medical man, with light hair and eyes, and evidently of a somewhat strumous disposition, came to me in great alarm, stating that he had a discharge from the urethra for which he could not account. The discharge was white, and at the early part of the case occasionally mixed with a small quantity of blood. There was no appearance of inflammation about the lips of the urethra. I had no difficulty in informing this gentleman that his affection was strumous, and he soon got well under a course of tonic medicines, without any local application.

These discharges, depending upon strumous disease of the prostate gland, are sometimes attended with ardor urinæ, and sometimes not. I am not able to say whether the pain is of the same kind as that which attends urethral discharges generally, but it certainly depends upon an entirely different cause from that which would be produced by an attack of gonorrhœa. In the first case the pain is caused by the passage of the urine over the prostate gland, and is referred, as is very generally the case when the prostate is affected, to the extremity of the urethra. In the second case the pain is caused by the passage of the urine over the inflamed membrane where the sensation is felt.

These patients do not often die, and it is difficult to prove the origin of the discharge; but from a considerable number of cases of this kind which I have seen, all occurring in patients of the same constitution, I have very little doubt that the affection consists in a strumous disease of the mucous membrane of the prostate gland. Although little can be done for this disease beyond improving a patient's general health, the relief of mind afforded when the real nature of the case is ascertained is often very great.

If Hunter has left us little with regard to the secretions of the prostate, he has left us much respecting those of the vesiculæ seminales. These, he says, have been considered as reservoirs for the semen, in the same way as the gall-bladder is supposed to be a reservoir for the bile. The fluid contained in these vesiculæ in a dead body is of a brownish colour, and often varies in consistence in different parts of the bag, as if not well mixed. In a man who was killed by a cannon-ball Hunter found, immediately after death, the fluid in the vesiculæ of a lighter colour than is usually found in men who have been dead a considerable time; but it was not by any means like semen, either in colour or smell. In another man who died instantaneously, the contents of the vesiculæ were of lightish whey colour, and quite different from semen. The contents of these glands are exactly like the secretion which is often discharged upon straining hard at stool, or upon the expulsion of the last drops of urine. This disease, Hunter observes, " is generally called a seminal weakness, and is commonly supposed to be a discharge of semen; but in all the cases of this kind in which I have been consulted, it nearly resembled the contents of the vesiculæ in the dead body, though perhaps not quite of so deep a colour."

Hunter gives several cases to prove that the secretion in the vesiculæ is much the same after the removal of the corresponding testis, and concludes, that although these glands are connected with generation, yet that they by no means depend upon the testicles for their contents.

A man died in St. George's Hospital with one testis only. Both vesiculæ were filled with the same kind of mucus, and similar to that which is found in other dead bodies. Another man died in St. George's Hospital, and it was discovered that the testis on one side had almost lost its natural texture. Upon examining the testis with attention, there was no appearance of vas deferens, except near the bladder, where it was found to be as full as the other. The vesicula on that side were also found to be as full as on the other, and to contain the same kind of mucus. A married Frenchman had his left testis removed. On examining the body a year afterwards, the vesiculæ were both found nearly full; and the vas deferens of the left side, where it lies along this bag, and where it has a similar structure with the vesicula, was likewise filled with the same kind of mucus. This Hunter believed to be always the case, whether the testis was removed or not. Another man died suddenly in St. George's

Hospital who had had one testis removed. Upon inspection of the body the contents of both vesiculæ were exactly similar, and one was as full as the other.

In another dissection made by Hunter, the right vas deferens terminated at once, about an inch from its passage out of the abdomen, in a blunt point, which was impervious. In this case a portion of the epididymis was wanting, and likewise the vas deferens for nearly the whole length of the spermatic cord on the right side. There was some other malformation in the case, which it is unnecessary here to describe. But, as the result of the whole dissection, Hunter found that there was no communication between the vas deferens and the epididymis, nor between the vesiculæ and the urethra. The caput gallinaginis had the common appearance, but there were no orifices to be found. The testis on each side was very sound, and the duct from it to the epididymis was very manifest, and contained semen.

From these circumstances, observes Hunter, we have a presumptive proof that the semen can be absorbed from the body of the testicle, and from the epididymis, and that the vesiculæ secrete a mucus which they also are capable of absorbing when it cannot be made use of.

This observation of Hunter's is one of great importance, because a false physiological principle in an opposite sense has led to much vicious practice. It has been assumed and taught in public theatres, by men old in years but perhaps not in wisdom, that the elimination of the semen was as necessary to health as the discharge of the bile or the urine. This is not so. In man and in animals, in a state of nature uninfluenced by exciting causes, the testis has the power to deal with its own secretion, and so have the so-called vesiculæ seminales.

A gentleman who passed many weeks among a savage tribe, told me that during the time he was there, having seen nobody for whom he felt the least inclination, he had no seminal discharge of any kind, and remained in perfect health.

In animals, when subject to excitement, there is often some white fluid observed at the extremity of the urethra. This probably comes from the various glands about the urethra itself; but I should think that a seminal discharge in them, except when excited by intercourse, was exceedingly rare. Hunter's idea, that the testis has the power of dealing with its own secretion, is, I believe, quite correct; and of this I have lately had a remarkable proof. A gentleman had had inflammation of both testes, supposed to be of a scrofulous nature. On each epididymis there was left a circular indurated knot, which appeared to have rendered the duct quite impervious. At all events, this gentleman had had no emission for a period of three years. He was, however, in perfect health, and all his functions, including his sexual relations, with this exception, were perfectly natural.

In men with well-regulated minds, and under correct moral influences, I am satisfied that often no urethral discharge of any kind occurs. Provision is made by which the secretion is in some way altered and removed, as it doubtless is in the ductless glands.

Hunter believed that the semen was secreted, when required, " by certain affections of the mind stimulating the testicles to action," and that it is not kept in reservoirs after it is secreted; and he observes that the vesiculæ seminales are full of mucus in patients who have died of a lingering disease, and whose bodies are much emaciated; and that they are nearly as full in the old as in the young. From these facts, derived from the human subject, Hunter deduces the conclusion that the vesiculæ seminales are not physiologically connected with the secretion of semen. This, if true, is again a great practical fact, and one which, had it been duly appreciated, would have prevented many a miserable patient from falling into a state of desponding melancholy.

The subject, as I shall hope to show, is, in a practical point of view, of so much importance, that I shall offer no apology for insisting upon it at some length, and giving the proofs which Hunter has adduced from the formation of the parts in animals.

The vesiculæ seminales in the horse are like two small urinary bladders, almost loose and pendulous. Their openings into the urethra are very large; and although they open close to the vasa deferentia, they do not communicate with them. Their contents in the gelding and in the stone horse are exactly similar, and in no way resemble the semen emitted by the stone horse in coitus, or what is found in the vas deferens after death.

In the boar these bags are extremely large, and divided into cells of considerable size. Their ducts contain a whitish fluid, very unlike what is found in the vasa deferentia of the same animal, with which they have not the least communication.

In the rat the bags are large and flat, with serrated edges, and lie some way within the abdomen. They contain a thick ash-coloured mucus, nearly of the consistence of soft cheese. This is very different from what is found in the vasa deferentia of the same animal, with which they do not communicate.

In the beaver the ducts of the vesiculæ seminales have no communication with the vasa deferentia, but they both open upon the verumontanum. In the guinea-pig they are composed of long cylindrical tubes, and lie in the cavity of the belly. They contain a thick bluish transparent substance, which is softest near the fundus, and becomes firmer towards the openings into the urethra, where it is as solid as common cheese. From this circumstance, and what is observed in the horse, the fundus appears to be the part that secretes this substance, which is very different in colour and consistence from the contents of the vasa deferentia, and is often found in broken pieces in the urethra.

Hunter performed this experiment: He extracted one of the testicles of a guinea-pig, and six months afterwards he gave it the female. He afterwards killed the animal, and found the vesicula of the perfect side and that of the side from which the testis had been removed, both filled with a substance in every respect similar.

In another guinea-pig Hunter examined carefully the contents of the vagina and uterus immediately after connection, and could not find in either the mucus of the vesiculæ, which, from its firmness, must easily have been detected.

Many animals, he observes, have no such bags; and he believed that they are wanting in the greater part of that class which live chiefly on animal food. In birds there is nothing analogous to these bags; and in them, if they were reservoirs for the semen, they would be more necessary. The vasa deferentia in them are enlarged, probably in order to answer that purpose.

It is somewhat surprising that Hunter, having investigated this subject so completely, should not have drawn any practical conclusions from it in his Essay. It is, however, quite possible that he did draw such conclusions, and that his papers upon the subject perished with so many of his other works.

That the vesiculæ seminales are in some way connected with intercourse, he concludes from the fact that in the land mouse, mole, and other animals that have their seasons for propagation, these bags are hardly discernible in the winter, but in the spring they are very large; they vary in size, in the same manner as the testes. The prostate gland in these animals undergoes a similar change. In the mole, for instance, the prostate gland is hardly discernible in winter; but in the spring it is very large, and is filled with mucus.

Hunter observes that if an animal is castrated while young, and examined after it has attained its full growth, the cavity at the bulb is little larger than the canal of the urethra, and the muscles are white, small, and have a ligamentous appearance; and he concludes that the enlargement of the bulb in the perfect male is to answer the purpose of a receptacle for the semen: "The prostate gland, Cowper's glands, and the glands along the urethra (of which the lacunæ are the excretory ducts), are in the perfect male large and pulpy, secreting a considerable quantity of slimy mucus . . . while in the castrated animal these are small, flabby, tough, and ligamentous, and have little secretion." Hunter concludes that the bags called the vesiculæ seminales are not seminal reservoirs, but glands secreting a peculiar mucus, and that the bulb of the urethra is, properly speaking, the receptacle in which the semen is accumulated.

The prostate gland, Hunter says, is not common to all animals. It is wanting in the bull, buck, and probably in all ruminating animals. In this class the coats of the vesiculæ seminales are much thicker and more glandular than in those which have prostate glands. It is therefore natural to suppose that the vesiculæ answer nearly the same purpose as the prostate gland. According to Owen, these vesiculæ may be regarded in them as a bifid prostate.

The enlargement of the bulb of the urethra, as we have seen, answers the purpose of a receptacle for the secretions poured out during sexual excitement, and the muscles of the part, especially those called acceleratores urinæ, are for the purpose of dealing with these secretions. The muscular fibres connected with the urethra act in concert with these, and are very little developed in a male that has been deprived of its testes when very young. The corpora cavernosa are muscular. In the horse, the parts composing the cells of the penis appear evidently muscular to the eye; and in a horse just killed they contract upon being stimulated. The disposition of the muscular fasciculi of this part, Owen observes, is chiefly longitudinal, interlacing in an undulating manner with the transverse tendinous fibres. They are most numerous near the termination of the corpora cavernosa, and gradually diminish as they approach the origin. When examined with a high magnifying power, the ultimate fibres of these fasciculi exhibit, but in a fainter degree, the transverse striæ characteristic of the voluntary muscular fibre.

Connected with the urethra, then, we have a complete system of muscles, some voluntary, more or less under the control of the will; others involuntary, the action of which is, nevertheless, in perfect coordination with the action of the voluntary muscles. On certain occasions the whole of these muscles are taken out of the control of the will, and are regulated by local sensations.

We are indebted, in great measure, to Dr. Lee, for having demonstrated the means by which involuntary muscular actions are regulated and controlled.

Many of us will recollect, in our earlier days, hearing that involuntary muscles acted by a law inherent in themselves, and we must often have seen a heart recently removed from an animal, cut off from the great nervous centres, placed upon the table in order to demonstrate that the involuntary muscles acted independent of nervous influences. Dr. Lee has demonstrated the nervous system by which involuntary muscular actions are stimulated and regulated — a system not massed together as a distinct organ, but scattered through the whole system of involuntary muscles, and embedded in the substance of the muscles themselves. It is not for me in this place to express any opinion on the merit of the preparations originally presented by Dr. Lee before the Royal Society. But in connection with our present subject, I may be allowed to say, that I believe that Dr. Lee has given us good ground for believing that the action of every involuntary muscular fibre is regulated and controlled accurately and perfectly by nervous influences. Certain muscular actions are partly voluntary and partly involuntary, and in accordance with this we find that some of those actions are accompanied by corresponding sensible impressions upon the brain, and that others are quite independent of any such impressions; and correspondingly we find that the ganglia and nerves of involuntary muscles are connected by ordinary nerves more or less perfectly with the great nervous centres.

The application of these general physiological facts to our present subject appears easy and direct. From mental indulgence, from disease, from old age, and from a great variety of circumstances, the local nervous system which controls and regulates the muscles connected with the urethra, may become preternaturally irritable, or may lose their normal power. The last condition will not unfrequently succeed the first.

I abstain from going into details, but will describe generally a condition which I have known to occur in both sexes.

Without any external inducement, although at first probably not without the consent of the will, a feeling of preternatural excitement will occur, sometimes several times in the four-and-twenty hours, in the day-time as well as at night, during active employment as well as during the hours of idleness. This condition may persist, and become altogether independent of the will, and, I repeat, quite independent of any external cause. It may be followed by partial or even complete loss of natural sensation; and with the loss of natural sensation the nervous influences which guide the involuntary muscles are partially or completely paralysed; the governing power is gone, and with it the tone and natural actions of the muscles. This condition obtains in those who are married and those who are not. The former sometimes go through their married life with little or no sexual feeling, and to the latter the idea of marriage is sometimes most repugnant. A young lady was subject, sometimes in reading, sometimes in working, to the local excitement which I have described. It would occur four or five times a day, quite independent of any external cause or any mental impression. It was quite without her control, and she spoke freely of it to her mother. After this condition had continued for several weeks, the patient was attacked with gastric fever. On her recovery, the morbid excitement had entirely disappeared. She became engaged to a gentleman whom she liked well enough at a distance, but she could not bear him to approach her or to touch her. All sexual feeling had disappeared. The position was clearly understood by the friends on both sides, and with great reluctance on her part, the lady and gentleman were married—the gentleman undertaking, if necessary, to travel with her as her companion only, until her health was restored. There was in the case, as I suppose, a local paralysis of the sentient nerves. The disease which I have attempted to describe occurs more frequently, I believe, in its most aggravated forms, in women than in men; but in its milder forms it is by far more common in men than in women.

It is in this condition of the partial paralysis of the nerves, and consequently of the actions of the involuntary muscular fibres, and especially, as we may suppose, of the involuntary muscular fibres which act as sphincters to the ducts which enter the urethra, that the secretions from the prostate, the so-called vesiculæ seminales, and Cowper's glands become poured, upon mechanical pressure, into the urethra. The presence of these secretions may or may not excite the action of the acceleratores muscles (for they also may partake of the want of tone), and the secretions may find their way out of the urethra either gradually, or suddenly in some appreciable quantity. In the efforts to expel the contents of the rectum this not unfrequently occurs. It is a condition which may obtain from any cause which paralyses the involuntary muscles of the part, and is by no means necessarily connected with any former excesses, although it may, unfortunately, be often traced to this cause.

The constitutional treatment must vary with each individual case. Often the case is one rather for moral discipline than for medicine. In other instances, the excitement which precedes the disease recurs with each returning attack of gout or rheumatism. Sometimes it originates by reflex action from the bowels; and, as a practical remark, I may here mention that it is well in such cases that the rectum should be emptied at night before going to bed. This may easily be done with great certainty by habit. It is one of the few medical precepts left us by Locke, that by habit the bowels may be moved at the same time every day, and everybody may choose for himself at what hour that shall be; and generally, if he pleases, he may make the bowels act twice a day.

In a certain number of cases, and especially in old people, the disease is one of real debility, and hence stimulants and tonics are beneficial; but, in the majority of cases, these seem to expend their influence rather upon increasing the local irritation than in giving general strength to the system. Prolonged bodily exercise, cold bathing, but especially mental discipline, are the general remedies most likely to be attended with benefit.

The local treatment of involuntary discharges from the vesiculæ seminales is a highly important subject; and it deserves our best consideration with regard to what ought not to be done, as well as with reference to means that are really beneficial.

Since the publication of Lallemand's works in 1836 and 1838, a very large number of patients have believed that they are subject to involuntary seminal discharges on going to stool or upon expelling the last drops of water; and they sometimes think that they are doomed to all the evils which he has described. So long as they observe some mucus escape upon straining, so long are they the victims of most miserable forebodings, and pass a most unenviable existence.

Their fears have not unfrequently been unconsciously fostered by medical men, who have believed their report that daily perhaps, or several times a week, they suffered from involuntary seminal discharges. It is a pity that Hunter's works had not been well considered before medical men could lightly sanction such an idea. I do not mean to say that real seminal discharges, without excitement, do not occur in this way; but I do maintain that they are exceedingly rare. In many of Lallemand's cases the discharge occurred while the patient was straining at stool; and cases of the kind are sufficiently frequent in the present day. But the discharge is that which Hunter has so well described as coming from the vesiculæ seminales, the prostate, and other neighbouring glands. It is very seldom indeed that any semen is mixed with the secretion. The great practical value of Hunter's observations here stands out in bold relief. A surgeon who could assure his patient that the viscid mucus that he passed on straining was nothing but the secretion of the prostate and neighbouring glands, would often do more to secure his happiness than can well be described in words.

Many of the patients who have suffered in the way I have mentioned have been subjected, according to Lallemand's method, to cauterisation of the urethra, and some of them have no doubt been very materially benefited; but some also have had reason in after-life to regret their treatment more than their disease. The application of caustic to any part of the urethra is a very painful and severe remedy. It has often been followed by contraction of the part of the urethra to which it has been applied, and in some cases very severe inflammation has been induced. Nevertheless, in some instances it has proved a very valuable remedy. In the great majority of cases, all the benefit that can be gained may be had at much less expense of suffering, and by much more simple means.

As Lallemand has shown, different alterations of structure may occur at the opening of the ducts in the prostatic portion of the urethra; but very generally the parts are relaxed only.

It is a common law, with regard both to the body and the mind, that after undue excitement a kind of partial paralysis ensues. The mind, the brain, the eye, the stomach, and the kidney, as we saw in the last Lecture, all, when overtasked for any length of time, fall into a condition in which they cannot perform even their ordinary functions. We have too many instances in our own profession, where men, under the stimulus of necessity, or ambition, or some more material agent, have worked with great brilliancy for a time, and have then fallen into a state in which they either fancied that they could, or really could, do nothing. The over-exercise of the eye by the microscope has produced similar results. Any one not accustomed to it, who will take a long ride, will experience the truth of this law with regard to the voluntary muscles. But it is in the involuntary muscles that the effects, although slowest to manifest themselves, are the most lasting. The intestines, and especially the rectum, will often fall into a state in which all healthy muscular tone seems to be gone;

and the muscles of the urethra form no exception to this general law.

The parts, as we say, become relaxed. In more precise language, the involuntary muscular fibres lose their tone. In partial paralysis of the rectum, if the sphincter muscle does not fulfil its office, some of the contents may escape; and an analogous condition often obtains with regard to the urethra. This is, I believe, the true pathology of the greater number of cases which come under our observation as connected with the present subject. The circular fibres at the orifices of the ducts of the so-called vesiculæ seminales lose their power, and upon mechanical pressure some of the mucus of these bags escapes. This want of tone may result from over-excitement, from weakness, from old age, or from actual disease, and may occur in animals as well as in man. It is observed in worn-out horses. An eminent veterinary surgeon has given me the following opinion upon this point: "So far as my observation extends, I am not aware of any seminal emissions taking place from the horse without excitement. In old stallions there is often a discharge from the penis during erection, which I believe does not arise from the testis."

Now, if the true pathology of by far the greater majority of the cases which have been considered and treated as cases of spermatorrhœa consists, as I believe, simply of a relaxation of the muscular fibres of the ducts entering the prostatic portion of the urethra, then the disease becomes (however it originated) in a great measure a local one, and may be benefited by local treatment. With regard to local applications, I would say, however, as a rule, that I believe caustic to be entirely unnecessary. The object in view is to give some degree of tone to the parts; and this is quite as well done by the application of some astringent fluid as by destroying a portion of the mucous membrane. In these cases I have been in the habit of applying a solution of perchloride of iron to the prostatic portion of the urethra through a catheter of peculiar construction. The solution is generally made of the strength of from two or four drachms of the liquor ferri perchloridi to eight ounces of distilled water. A catheter, with openings at the end, and a piston in its straight (not its curved) part, is charged with some of this fluid, and introduced so that the orifices in the instrument may rest in the prostate gland; and the piston is then thrust forward so as to expel the contents of the catheter. The piston acts much better when placed in the straight part of the catheter, and the inconvenience of the bend is avoided. This mode of treatment is equally applicable to the cases which I have been describing, in which the discharge consists of the secretion of the glands in the neighbourhood of the prostate, and to those cases in which there is an involuntary discharge of semen. I have now treated a very considerable number of patients in this way, and often with marked and permanent benefit. To these I will not, for several reasons, now further allude, beyond, in conclusion, giving an extract from the letter of a medical man, who applied the remedy in his own case: "I have tried *everything*, I may say. The solution of iron is the *only* remedy I have found do me good. I shall always feel grateful for your advice, which I may say has produced almost a cure. The caustic did me little or no good."

Want of power in the organs of generation sometimes seems to depend rather upon a relaxed condition of the veins than upon nervous debility, although these may be associated together as far as their ultimate cause is concerned. The veins in different parts may become varicose, and as the diameter of the vessels is increased the rapidity of the circulation through them is necessarily diminished. This varicose condition is generally found in the spermatic veins of the left side, and is sometimes accompanied by atrophy of the corresponding testicle. The skin and surrounding cellular tissue often become relaxed at the same time. The scrotum will then appear much larger on that side than on the opposite, and the testicle will hang much lower than natural. The remedy for this condition of things is simple. Some of the enlarged veins may be obliterated by subcutaneous division, the vessels on either side being previously secured by acupressure; or a portion of the relaxed scrotum may be removed together with the enlarged veins which it contains. This may be conveniently effected by means of a clamp, such as will be described in the next Lecture, for the removal of vegetations. The veins having been previously secured by hare-lip needles and 8 ligatures, a portion of the relaxed skin, together with the subjacent areolar tissue and some of the varicose veins, may be seized with the clamp and cut out with a pair of curved scissors; the cut surface may then be seared with a black-hot iron, and the hare-lip needles removed at the time, or the next day.

In one case in which I performed this operation the testicle hung so low that the patient, who was in the habit of riding, often hurt himself very much by pressing it between the upper part of his thigh and the saddle. In this instance I removed a considerable portion of the scrotum, together with a mass of enlarged veins. The parts healed very satisfactorily, as shown in a drawing, where the testis on the side operated upon is shown afterwards to be not below its natural level.

In another case the dorsal vein of the penis was very much enlarged, and was obliterated by the operation which I usually perform for varicose veins. The operation consists in isolating the vein by two hare-lip needles placed under it, with an 8 ligature tied tightly over their extremities, and the vein was then completely divided by subcutaneous section. There was some numbness of a portion of the skin of the penis for a few days after the operation. The natural sensation, however, soon returned, the vein remained permanently obliterated, and the patient expressed himself much satisfied with the result.

LECTURE X.

LYMPHATIC ABSORPTION—TREATMENT—LOCAL AFFECTIONS—WARTS AND EXCRESCENCES.

HUNTER divides absorption by the lymphatics into three kinds in reference to venereal diseases : 1. Physiological absorption, treated of in a previous Lecture, where the matter is applied to a sound surface, and without producing any local effect upon the part, is absorbed immediately upon its application. Hunter says that he had instances of this in men, and he believes also that it occurs in women—at all events, he had seen it in women where there was every reason to believe that they had neither chancre nor gonorrhœa. He says, however, that this mode of absorption must be very rare. If we were to examine the parts very carefully, or inquire of the patients very strictly, probably a small chancre might be discovered to have been the cause ; and in women, he says, it is uncertain in many cases whether they have gonorrhœa or not.

2. The second mode of absorption of venereal matter is where the action is preceded by a kind of suppuration, or by symptoms resembling those of gonorrhœa, without any breach of surface. This, we have seen, as in No. XLIII. and following Cases, may occur, but it is also uncommon.

3. The third mode of absorption is from an ulcerated surface. This is by far the most usual kind.

To these Hunter adds the absorption from a wound, which he believes is not so frequent as any of the former. But this statement must be taken in reference to the natural transmission of disease, for he well knew that it might be communicated by artificial inoculation.

Lymphatic absorption of the product of a suppurating sore, affords the same evidence of the nature of that sore as does artificial inoculation. The secretion transferred to another part is followed by the same effect, whether artificially conveyed by the point of a lancet or by the natural action of lymphatic vessels. In either case, where the seed takes root, there will it germinate and produce its natural consequences. The morbid process which ensues, surely terminates in the formation of a small quantity of matter which always has peculiar properties. This matter is *pus*, and pus which has the property of always reproducing its specific action when again applied to another part of the same body, or when inoculated upon another person. This pus is therefore called *specific.* To the naked eye and to the microscope it presents all the characters of ordinary pus; but it has, in addition, its specific qualities, which are known only by their effects. Even to the naked eye and to the microscope, the secretion from the soft suppurating form of venereal sore has characters which distinguish it from the secretion of the indurated syphilitic sore. It consists of well-formed pus; and each globule is of nearly the same size, and distinct from the rest. If, in any doubtful case, some of the secretion from a sore be mixed with a little dilute acetic acid and placed under the microscope, the distinctive characters of the pus nuclei will be seen. The appearances produced are quite distinct from those which are afforded by the secretion from the primary uncomplicated syphilitic lesion treated in the same manner.

When this specific matter has produced its natural effect either in a lymphatic vessel or gland, the fresh portion of pus thus generated produces a fresh specific irritation, and this irritation produces an abscess, which, breaking externally, discharges its contents. In such a case the matter in the interior of the gland, or lymphatic vessel, constantly retains its specific characters; but that which, during the process of suppuration is formed outside the vessel or gland is ordinary non-specific pus. As the disease advances, these two secretions may be mixed together, and then the whole acquires the characters of the specific fluid, and the surface of the whole sore will produce an inoculable secretion.

Lymphatic absorption from the contagious suppurating sore then necessarily produces a suppurating bubo. Any attempt to prevent such an affection from suppurating is entirely futile. The disease in the groin is only a repetition of that upon the surface of the body.

The disease now described is not beneficially influenced by mercurial treatment; and inasmuch as it has no tendency when left to itself to infect a patient's constitution, any mercurial treatment in order to prevent such an infection is entirely superfluous. The ulcer will sometimes be tedious in healing, and a variety of applications may be tried occasionally without producing any apparent effect upon the course of the disease. In a case under my care at St. George's Hospital, a sore of this nature lasted four months, apparently little influenced by treatment; but the patient at the end of that time made a very good recovery, and remained well, without having taken any mercury.

To this kind of absorption Hunter's words apply in the strictest sense. He says:—"As the venereal poison has the power of contaminating whatever part of the body it comes in contact with, it contaminates the absorbent system, producing in it local venereal complaints." Hunter goes on to say that when this matter is absorbed from a common surface, from a wound, from an inflamed surface, or from an ulcer, it is carried along the absorbent vessels, and in its passage often produces the specific inflammation in those vessels. The consequence of this is the formation of abscesses, exactly similar in their nature and effects to a chancre, as the absorbent vessels or glands are immediately irritated by the same specific matter, which has undergone no change in its passage. The consequent inflammation must therefore have the same specific quality, and the matter in them be venereal.

Hunter regarded the lymphatic glands as ramifications of the lymphatic vessels, and in these ramifications or convolutions the disease from lymphatic absorption generally shows itself, and one gland only is generally affected by the absorption of matter from a suppurating sore. In other cases, however, one, two, or three abscesses, each with its specific characters, may form in the groin or along the upper part of the penis.

Wherever the matter from this kind of lymphatic absorption lodges, there it produces its specific effect, and the action terminates in suppuration in the same way as if it had then been artificially inoculated.

Another kind of action noticed by Hunter is that in which a lymphatic vessel leading from a chancre appears like a cord extending along the back of the penis (see Case LVIII.) Sometimes these arise from thickening of the prepuce in cases of gonorrhœa. In such cases, however, the prepuce is generally excoriated.

These cords, Hunter observes, often terminate insensibly on the penis, near its root, or near the pubes; at other times they extend farther, passing to a lymphatic gland in the groin. The cord can be easily pinched up between the finger and thumb, and it often gives a thickness to the prepuce, causing it to be so stiff at this part as to make the inversion of it difficult, and producing a kind of phimosis. The lymphatics, in such cases, arise from an excoriated and inflamed internal prepuce, and the cord-like feeling arises from the thickening of the coats of the absorbents, joined with the extravasation of coagulable lymph. We have here an account of the specific adhesive inflammation as it affects the lymphatic vessels, and although mixed up in Hunter's description with the suppurating form of the disease, yet has he given the distinctive characters of each with his usual clearness and precision.

Hunter dwells upon the importance of distinguishing the glands which enlarge from venereal causes, from those which originate from other sources. The mercurial ointment applied to the thighs will sometimes produce an enlargement of the inguinal glands, and from this, it would appear that the mercury, or some part or combination of the mercury, is absorbed without breach of surface, not only through the skin, but that it finds its way along the lymphatic vessels. This is an important practical consideration when the object of treatment is to act principally upon the enlarged glands. The time at which the inguinal glands become enlarged is also a matter of importance. The syphilitic poison may not show its effects for six or seven weeks after its application. In one case where a young midshipman went to sea, the period of the first manifestation of the local disease was exactly seven weeks; and the same, or even a greater period, may elapse before the inguinal glands become affected. The glands second in order, as we have seen, are never specifically affected, as those along the iliac vessels or back. These vessels may certainly become inflamed in consequence of the absorption of matter from a diseased gland, or from the structures in its neighbourhood; but the effect is not then the characteristic specific induration of the gland as in cases of true syphilis, nor the specific suppuration as in cases of absorption from the local suppurating sore.

Virchow, in speaking of the occasional introduction —or intravasation, as he terms it—of pus and other diseased products into venous and lymphatic vessels opened by abscesses and ulcers, remarks that the transit of pus by lymphatic vessels is not at all uncommon, but he contends strongly against the production of general pyæmic infection by this means. "All the lymphatic vessels," he says, "which are in a condition to take up pus in this way are peripheral ones, whether they arise from external or internal parts, and only after a somewhat lengthened course do they gradually reach the blood vessels. In all, interruptions are formed by the lymphatic glands; and since we know that the lymphatic vessels do not pass through the glands as wide, tortuous, and interlacing canals, but that, after they have broken up into fine branches, they enter into spaces which are filled with cellular elements, it is manifest that no pus-corpuscles can pass a gland." This very important point of view, although it meets with the best possible confirmation in the daily experience of the practical physician, is generally overlooked, as Virchow conceives. He instances the process of tattooing. However minute the subdivision may be of the substances introduced, we never find these conveyed beyond the nearest lymphatic gland. In proof of this statement, Virchow adduced an example in which substances, introduced for this purpose by a soldier fifty years before, had not penetrated farther than the nearest lymphatic gland, as proved by microscopical examination of the parts.

Although, as he remarks, these glands act as a filter, in mechanically retaining the coarser particles, contained in the current of fluid passing through them, that is not by any means their whole office. "They have manifestly another part to play, inasmuch as the substance of the glands indubitably takes up into itself certain ingredients from the fluid mass of the lymph, retains them, and thereby also alters the chemical constitution of the fluid, so that it quits the gland all the more altered, because it must at the same time be assumed that the glands yield up certain constituents to the lymph, which did not previously exist in it." Virchow illustrates these statements by an appeal to ordinary phenomena observed in cases of malignant tumour and syphilis. "When an axillary gland becomes cancerous, after previous cancerous disease of the mamma, and when, during a long period, only the axillary gland remains diseased, without the group of glands next in succession or any other organs becoming affected with cancer, we can account for this upon no other supposition than that the gland collects the hurtful materials absorbed from the breast, and thereby for a time affords protection to the body; but at length this protection proves insufficient; and perhaps at a later period the gland itself becomes a new source of independent infection to the body, and a further propagation of the poisonous matter may take place from its diseased parts."

Neither observation nor experiment, then, affords any proof that the syphilitic virus is conveyed, as such, through the absorbent glands; all the direct evidence which we have points to an opposite conclusion. The sphere of morbid action in the case of the soft suppurating venereal sore is also circumscribed—it does not pass beyond the nearest lymphatic glands. If we could completely destroy the ulcer and extirpate the vessels and glands engaged in the local contagious affection, we should bring the specific morbid process to an end; but it would not be so in the case of a primary syphilitic infection, for the induration in the chancre and glands is an evidence that constitutional infection has already taken place. The syphilitic virus has already exerted some local influence on the tissues, otherwise the initial reaction would not ensue at the point where it first gained access to the system. All observation goes to show that the induration in the chancre and glands is but the first link in the chain of constitutional manifestations.

Hunter observes that he once suspected that the nature of the poison in venereal cases was changed as it passes through the inguinal glands, and that this was the reason why it did not contaminate the second and third series of glands; and why it did not affect the constitution in the same way as it did the parts to which it was first applied; but this explanation will not account for the glands next in order to suppurating buboes not being affected by the venereal matter.

We have now a clear explanation of these facts. In the suppurating bubo the matter already absorbed is discharged, and the sore left resembles an artificial inoculation from the same source, and from this no lymphatic absorption usually occurs; and with regard to the amygdaloid glands the same rule obtains as in other parts of the body—namely, that when the constitution of the patient has once become syphilitic the specific effects of the poison are no longer produced, either by natural or by artificial inoculation.

"The situation of buboes," Hunter observes, "arising from the venereal disease in the penis is, in men, in the absorbent glands of the groin; if a gonorrhœa is the cause of a bubo, one groin is not exempted more than the other; both may be affected: but if a bubo arises in consequence of a chancre, then the groin may be generally determined by the seat of the chancre, for if the chancre is on one side of the penis, then the bubo will commonly be on that side: however, this is not universally the case; for I have known instances, although but few, where a chancre on one side of the prepuce or penis has been the cause of a bubo on the opposite side, which, if arising from that chancre, is a proof that the absorbents either anastomose or decussate each other. If the chancre be on the frænum, or on the middle of the penis, between the two sides, then it is uncertain which side will be affected.

"The situation of the glands of the groin is not always the same, and therefore the course of the absorbent vessels will vary accordingly. I have seen a venereal bubo, which arose from a chancre on the penis, a considerable way down the thigh; on the contrary, I have seen it often as high as the lower part of the belly, before Poupart's ligament, and sometimes near the pubes, all of which three situations may lead to some variations in the method of cure; therefore it may be proper to attend to them.

"As the disease most commonly affects the organs of generation, the situation of buboes is generally in the groin; but as no part of the body, under certain circumstances, is exempt from this disease, we find that the nearest glands between the part of absorption and the heart, everywhere in the body share the same fate with those of the groin, especially if external."

The true venereal bubo, Hunter observes, is commonly confined to one gland—but this description evidently applies to the local suppurating form of the disease only. It keeps nearly its specific distance till suppuration takes place, and then becomes more diffused. It is rapid in its progress from inflammation to suppuration and ulceration. The suppuration is commonly large for the size of the gland, and there is but one abscess. The pain is very acute, and the colour of the skin is of a florid red. In connection with this subject, Hunter observes that he was afraid that patients had often undergone a mercurial course when there was no occasion for it. The true syphilitic buboes, as we have seen in previous Lectures, do not suppurate, except from some accidental cause of irritation.

The treatment of buboes naturally divides itself, according to their pathology, into those affected by the specific adhesive inflammation, and those resulting from a contagious local suppurating sore. The enlarged gland in the first case belongs to the series of secondary or constitutional symptoms, and must be dealt with in common with them. But where the object is particularly to reduce the swelling of the glands, mercurial frictions on the thighs is the most efficacious mode of treatment; and, as has been shown in a former Lecture, the cure is not complete until the swelling of the glands has disappeared, where that swelling depends only upon syphilitic infection. But, as observed by Hunter, when a gland is affected from any cause, if there be a tendency to diseased action in the constitution, it will develop itself in the diseased gland, and then we may get a mixed result, or the constitutional affection may continue to manifest itself in the local disease long after the specific venereal action has passed away.

In such cases it is very difficult to distinguish the effects of the specific syphilitic enlargement from that which may arise from other causes. In these instances of mixed action, or where a gland has become enlarged from specific or accidental causes in a patient predisposed to some other form of disease, the treatment appears often very unsatisfactory. To this class of cases which persist without any visible cause, Hunter's description applies. " The enlargement of the glands," he says—" is generally preceded and attended with slight fever, or the common symptoms of a cold, and is generally indolent and slow in its progress. If they are more quick than ordinary, they become more diffused than the venereal, and may not be confined to one gland. When very slow they give but little sensation, but when more quick, the sensation is more acute, though not so sharp as in those that are venereal; and most commonly they do not suppurate, but often become stationary. When they do suppurate it is slowly, and often in more glands than one, the inflammation being more diffused, and commonly small in proportion to the swelling. The matter comes slowly to the skin, not attended with much pain, and the colour is more of the purple than where a lymphatic inflames and suppurates briskly. Sometimes the suppurations are very considerable, but not painful."

When an abscess formed in this way has opened, it will be often found that a large indolently inflamed gland appears at the bottom. Between such gland

and the opposed textures no union will generally ensue, and a probe may often be passed around the circumference of such a gland.

Nothing can be more troublesome to cure than such buboes; and by far the shortest course is to destroy the gland by caustics, or to put the patient under chloroform, incise the gland, and detach it with the handle of the knife or fingers, subsequently stuffing the wound with lint. As the last may appear a severe plan of treatment, it may be well to try first the effect of repeated applications of nitrate of silver or the red oxide of mercury, by which the gland tissue is gradually destroyed, and contraction of the walls of the abscess sometimes ensues.

An enlarged gland, under the circumstances, may be conveniently removed by the elastic ligature. The gland may be held with a clamp made in the shape of a pair of curved scissors,* and the ligature placed round it, without any dissection of parts. If one portion of the gland is strangulated in this manner, the whole of it will slough and come away.

Sinuses, here as elsewhere, must be laid open; for it is very rarely that these heal by the injection of astringent and stimulating fluids. Of course, however, the effect of these can be tried before performing any operation. When a sinus runs perpendicularly downwards—*i.e.*, at right angles to the surface of the body—it cannot be laid open. An enlarged and inflamed gland will often be found occupying the bottom of the sinus, and preventing its healing. By applying caustic to this, and stuffing the part with lint, it may generally be made to cicatrise from below. So soon as there is a healthy granulating foundation, the sinus will begin to be filled up. If the process becomes chronic, it is a good plan to pass a narrow bistoury to the bottom, and incise the walls of the sinus, applying pressure afterwards.

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* See page 303.

During the whole treatment the patient should live well, take as much air and exercise as he well can, and steel with tonics are generally indicated.

A suppurating bubo arising from the absorption of the secretion from a local contagious sore, is to be treated as a sore of the same kind situated in any other part.

WARTS AND EXCRESCENCES.

Parts that have been subject to the action of the venereal poisons sometimes acquire a disposition to the development of new diseases, after all strictly venereal action has been removed. One remarkable tendency of this kind is to form excrescences or cutaneous tumours. What Hunter has left us on this subject is still well worthy of consideration. He says:—

"This disposition is strongest where the chancres were, and indeed chancres often heal into warts; but perhaps the parts acquire this disposition from the venereal matter having been long in contact with their surfaces, for it often happens after gonorrhœas, where there had been no chancres; and probably it is only in those cases where the venereal matter had produced the venereal stimulus upon the glans and prepuce, forming there what may be called an insensible gonorrhœa.

" A wart appears to be an excrescence from the cutis, or a tumour forming upon it, by which means it becomes covered with a cuticle, which, like all other cuticles is either strong and hard, or thin and soft, just as the cuticle is which covers the parts from whence they arise. They are radiated from their basis to the circumference, the radii appearing at the surface pointed or granulated, much like granulations that are healthy, except that they are harder and rise above the surface. It would appear that the surface on which each is formed has only the disposition to form one, because the surrounding and connecting surface does not go into the like substance; thus, a wart once begun does not increase in its basis, but rises higher and higher. They have an increasing power within themselves; for, after rising above the surface of the skin, on which they are not allowed to increase in breadth at the basis, they swell out into a round thick substance, which becomes rougher and rougher.

" This structure often makes them liable to be hurt by bodies rubbing against them; and often from such a cause they bleed very profusely, and are very painful.

" These excrescences are considered by many not as simply a consequence of the venereal poison, but as possessed of its specific disposition, and therefore they have recourse to mercury for the cure of them; and it is asserted that such treatment often removes them. Such an effect of mercury I have never seen, although given in such a quantity as to cure in the same person recent chancres and sometimes a pox.

" As these substances are excrescences from the body, they are not to be considered as truly a part of the animal, not being endowed with the common or natural animal powers, by which means the cure becomes easier. They are so little of the true animal, and so much of a disease, that many trifling circumstances make them decay;—an inflammation in the natural and sound parts round the wart will give it a disposition to decay; many stimuli applied to the surface will often make them die. Electricity will produce action in them which they are not able to support. An inflammation is excited round them, and they drop off.

"From this view of them the knife and escharotics must appear not always necessary, although these modes will act more quickly than any other in many cases, especially if the neck is small. In such-formed warts perhaps a pair of scissors is the best instrument; but where cutting instruments of any kind are horrible to the patient, a silk thread tied round their neck will do very well; but, in whichsoever way it is separated, it will be in general necessary to touch the base with caustic.

"Escharotics act upon warts in two different ways, namely, by deadening a part and stimulating the remainder; so that, by the application of escharotic after escharotic, the whole decays tolerably fast, and it is seldom necessary to eat them down to the very root, as the basis or root often separates and is thrown off. This, however, is not always the case, for we find that the root does not always separate, and that it will grow again; therefore in such cases it is necessary to eat down lower than the general surface, to remove the root."

Warts sometimes appear on the organs of generation when there has been no venereal disease of any kind, and these may be communicated by contact, as well as those which have a venereal origin. A gentleman who had a wart on his penis, and who had not had venereal disease, was married sometime after it had disappeared. His wife found that she had something the matter, and the gentleman was accused of having given her syphilis. Upon examination it was found that the vagina was partly blocked up with warty excrescences. These arose from every part of the vagina, and had increased very rapidly. They were removed by local means, and no further inconvenience was experienced.

The rapid development of the warts in this case, as it often does in others, depended probably upon their being nourished by the menstrual fluid.

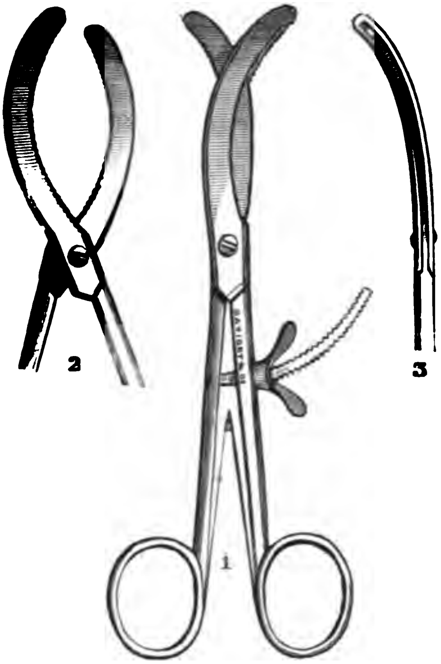
The same rapid cell growth may occur here as we have traced in different venereal diseases where the secretions have been brought in contact with, or allowed to remain mixed with freshly effused blood.

The menstrual fluid will produce the symptoms of gonorrhœa. It will give wonderful energy and activity to the secretion of a local contagious sore. It will determine the infection of syphilis, where that would not otherwise take place; and, as has now been shewn, it favours, in a very marked degree, the development and growth of warty excrescences.

In parts that are liable to be bathed in the menstrual secretion, masses of warts often attain a very large size, and continue for months. They bleed very freely when cut, and consequently were formerly seldom removed by operation. We have now, however, the means of removing them without difficulty. If the warts are of small size they may be tied with the elastic ligature. The object of the ligature in this case is not to cut the wart off at its base so much as to impede the circulation in it, so that it may slough. This action commencing in one part of the wart often extends to its roots, and the warty growth is much more effectually removed in this way than it could be by any cutting operation. I have here some cancerous growths which I removed in this way. The portions of the tumours, which separated on each side of the ligature, were about equal. They weigh in their present condition six and a half ounces, a great part having been lost in the discharges from the part. An ordinary ligature is not adapted for the purpose of removing large masses of warts. If tied sufficiently tight to stop the circulation through the mass, it will also be sufficiently tight to divide a portion of the tumour. Hemorrhage will then occur, and as soon as the ligature becomes loose, the circulation through the part will be re-established. The elastic ligature on the other hand does not cut at first, and by its contraction it follows any groove that may be made, and remains closely applied. The pressure is thus kept up sufficiently long to ensure the sloughing of the part.

Small warts treated in this way generally fall off in two or three days.

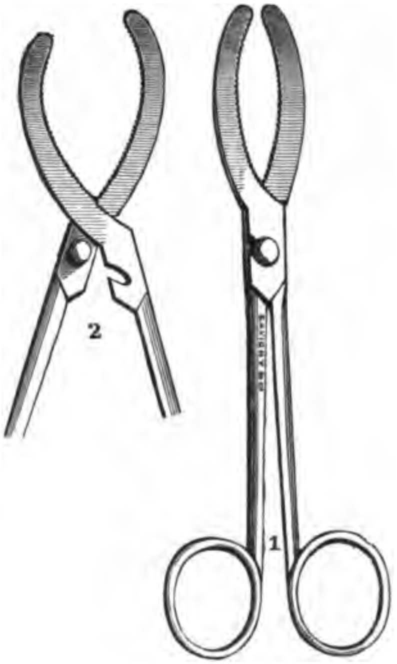
Another very effectual way of removing warty excrescences from any part is by the clamp and cautery. The base of the tumour is seized with a clamp made in the shape of a pair of scissors curved on the flat. The blades of the clamp are also curved in at the points, so as to overlap each other to a considerable extent when they are shut; or, better still, one blade is made to play within the other, as



1. Clamp closed. 2. Clamp open.
3. Blade curved on the flat.

represented in the accompanying drawing. A clamp of this description presses the base of the part to be removed equally on every side. The blades of the instrument cannot be displaced by any lateral pressure, and the included part cannot well slip.

When the blades of the clamp are sufficiently closed the part of the tumour projecting beyond them may be removed with a pair of scissors of the same shape as the clamp. In removing warty growths between the nates or at the orifice of the vagina, the instruments should be all curved on the flat, as represented in the drawing; a straight instrument cannot be inserted between the parts so as to enclose the base of the excrescences. In some cases the growths may be pulled down so as to be caught by a straight instrument, but they are very liable to be torn or to bleed during the operation.



1. Clamp with separate blades. 2. Blades separated.

After a tumour of whatever kind has been removed in this way the cut surface should be touched with a hot iron. The iron should not be above a black heat if the object is to prevent hemorrhage; at that temperature the heat coagulates the albumen in the tissues, they will adhere to the iron and to each other, and the vessels of the part will be effectually closed. When there is no danger of hemorrhage, and when it is desirable to destroy more of the tumour or excrescence than can be removed with the scissors or knife, then a red-hot iron may be used. It often happens that masses of warty excrescences or other tumours are so large that the blades of the ordinary clamp with curved blades cannot be passed round them. The points cannot be separated sufficiently for this purpose. It is well then to have the two blades of the clamp separate, as shown in these instruments* made for me by Mr. Blaise. The blades may be passed on the opposite sides of the tumour, and clamped afterwards in the same way as a pair of midwifery forceps are used.

* See electrotype on previous page.

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Printed by R. & R. Clark, *Edinburgh.*

London, New Burlington Street,
June, 1875.

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